

RESPONSES OF NORTH FLORIDIAN AMERICAN AND WESTERN NIGERIAN
SEVEN-YEAR-OLDS TO WORDLESS PICTURE STORY BOOKS:
A CROSS-CULTURAL ANALYSIS

By

SAMUEL OYEDOKUN OMOTOSO

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University of Florida

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Samuel Oyedokun Omotoso

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Chairman: Professor Arthur J. Lewis
Co-Chairman: Professor Linda L. Lamme
Major Department: Curriculum and Instruction

This study was designed to investigate the differences that might characterize the responses of North Floridian American and Western Nigerian seven-year-olds to Wordless Picture Story Books. Thirty subjects from each of these cultural groups were tested: White North Floridian, Black North Floridian and Western Nigerian seven-year-olds. The subjects were all urban, and their parents had at least a high school education.

Each subject told a story to two panel-selected Wordless Picture Story Books. The first story gave research assistants an opportunity to establish rapport with the subjects and also gave the subjects themselves some practice in telling stories under recording conditions. The second story was analyzed for the purpose of this study.

Analysis of the stories was based on two independent variables, namely, sex and ethnicity. There were also two dependent variables, namely, visual literacy and linguistic competence. The visual literacy variable has two dimensions: recognizing things in detail in the picture story book and interpreting actions that are supposed to be in progress in the sequentially arranged pictures. The other dependent variable -- linguistic competence -- has seven dimensions calculated to measure the syntactic maturity of subjects: the number of T-units, the use of subordinate clauses, colorful verbs, adjectives, adverbs, prepositional phrases and feeling words.

To determine significant differences between sex or ethnic group scores, under each dimension of visual literacy and linguistic competence, a 2x3 analysis of variance was run on the mean scores, and this was followed each time by a post hoc test (Tukey's HDS) when main effects, sex, ethnicity and interaction of both, indicated significant differences.

Findings. There was no significant difference in the stories told by girls and those told by boys under any of the visual literacy and linguistic competence dimensions, but there were significant differences among ethnic groups.

Under the visual literacy variable, all three groups recognized roughly the same number of objects, but white North Floridian subjects told of significantly more action in progress in the picture story than either of the other groups. Under the linguistic competence variable, Nigerian

subjects told longer, but less grammatically complex, stories than either of the American groups. Emotional expressions, as measured by the use of feeling words, were rare in any stories and virtually absent in Western Nigerian subjects' stories.

Conclusion. It is concluded that sex differences and interaction of sex and ethnicity have no significant effect on children's level of visual literacy or linguistic competence. Ethnic affinity and environment in which children grow up have significant effect on their level of syntactic maturity.

It is also concluded that wordless picture story books might provide a vehicle for children raised in an oral story-telling tradition to develop book awareness and stimulate language development. Children raised in a literary (book) culture might be encouraged to "tell" stories to wordless picture story books as a bridge to oral story telling of original stories, an excellent avenue for language development.

Recommendations. It is recommended that intervention programs be stepped up with greater concern in all three cultures for the development of visual literacy and language skills in today's electronic age children. Developmental counseling is recommended for Nigerian elementary schools.

CHAPTER 1

RATIONALE

Visual Literacy and Language Development

Today's children are a new breed. They are born into a fast-moving society. There are many things for them to learn rapidly in order to fit themselves in and live safely and successfully within modern society. Theirs is the age of diversified mass communication media, exposing them to a multitude of options for learning. They seem to need extra sensory parts of the body -- perhaps a third ear and an extra eye, to deal with the situation. Since this is physically impossible, they need direct help in learning to make the best use of what they have. They need training in order to be able to cope with the massive information they are daily bombarded with from T. V., radio, newspapers, magazines, books, classroom instructions, highway signs, people's body language, movies, comics, slides, etc. This is a great responsibility which technology and civilization have thrust on today's children. They need training in thinking fast, seeing and hearing intelligently, making quick decisions right from their early years. Unfortunately, present-day schools seem not to be keeping pace with the speed of change within the

society. As Flynn (1972, p. 42) put it, "The school must rapidly restructure itself to serve today's electronic age children or it will perish as an institution."

There is evidence that educators in the United States are demonstrating awareness of the needs of "today's electronic age children." For instance, one of the most recent additions to the school curriculum in the direction of a constructive change is "visual literacy." This term was coined in 1966 by John L. Debes who more than any one else, has given it direction and encouragement as a multi-dimensional concept (Groff, 1974). The term "visual literacy" generally is used to refer to the numerous techniques used by people to communicate with each other in a non-verbal way. These may be through body language, art form, pantomime, graphic expression, film expression, picture story expression and so on. According to the 1966 National Conference on Visual Literacy, the concept refers to

a group of vision competencies a human being can develop by seeing and at the same time having and integrating other sensory experiences. The development of these competencies is fundamental to human learning. When developed, they enable a visually literate person to discriminate and interpret visible action, objects, and/or symbols, natural or man-made, that he encounters in the environment. (Purvis, 1973, p. 714)

The acquisition and creative use of visual literacy competencies makes it possible for a visually literate person to communicate more effectively with other people, and he is able to comprehend and enjoy various forms of visual communications.

Four main rationales presented by advocates of the visual literacy movement in support of visual literacy in the curriculum are: (1) there is a visual language, (2) people can and do think visually, (3) people can and should express themselves visually, and (4) the primary elements of the visual language are lines, shapes, forms, size, color and movement (Morgan, 1972, p 2).

A visual literacy program is described by Flynn (1972) as "a communication vehicle that provides boys and girls with the opportunity to record and interpret their world as it really is both objectively and subjectively." The main objective of training in visual literacy, therefore, is to give the students an opportunity to acquire the ability to make viable judgment about the images they perceive. Debes (1968, quoted by Purvis, 1973) expressed three general types of learning experiences which contribute to the development of visually literate individuals.

1. The nature of the learning experience should provide practice for the learner in selected activities from his environment particularly visual phenomena of importance to him.
2. The nature of the learning experience should permit the learner, once he has seen a thing, to do something in such a way that there transpires a meaningful interaction between him and whatever he sees.
3. The nature of the learning experience should be contrived in order that opportunities exist for the learner to have practice in arranging his ideas visually. (p. 714)

Purvis concluded: "Visual literacy is that growing awareness on the part of teachers and pupils of greater alternative responses to a constantly changing visual world. It appears as if at every point in the curriculum where the teaching of verbal skills is justified, corresponding visual skills can also be justified" (p. 715).

Turbayne (1970b) founded a philosophical justification of a visual language. He postulated that seeing is not a simple task for it is more than just a direct transmittal of information from the environment of the brain with visual language. The visual language is learned by a comparison of the physical/factual world with what is seen of the world.

Levie (1973), reviewing a number of studies, reported on concept acquisition research which shows that subjects are sometimes able to discriminate concepts visually even though they are unable to verbalize their findings. Dornbush and Winnick (1966) confirmed that perspective drawings can convey information for children of five to seven years, indicating that perceptual learning of pictorial cues may have occurred by that age.

In recent years, the attention of researchers in the area of children's language, and affective and cognitive development, has been directed to the use of pictures as stimuli in training children for visual literacy and in generating spontaneous verbalization. Most of these studies have shown consistent agreement that pictures, if properly used, can play a significant role in children's cognitive

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and language development (Debes, 1968; Swick & Blackwell, 1972; Cianciolo, 1973). Pictures have been highly recommended by childhood educators for the promotion of a new emphasis in elementary school curricula, popularly referred to now as "visual literacy" (Travers & Alverado, 1970; Cianciolo, 1973; Greenlaw, 1975).

Authors and artists have produced a number of wordless picture books which have been useful in the development of this new curriculum area (Simpson, 1975; Cianciolo, 1973). The response of the public and some educators to wordless story books encouraged more of these books to appear on the market. However, opinions of authorities in children's literature differ as to the limitations or advantages of wordless books in promoting visual literacy and preparing children for reading or enjoying literature.

One school of thought is represented by Cianciolo, a professor of children's literature in the College of Education, Michigan State University. According to Cianciolo (1973) wordless picture books

constitute an excellent type of literary material through which children might be taught to read, to become visually literate, and to study aspects of literature, especially fiction . . . a child with power of visual literacy will be able to recognize and evaluate in these pictures such basic components as plot development, characterization, theme, setting and style, since the pictures carry the completed word in the way of literary connotation. (p. 226-31)

However, Groff (1974), representing a different school of thought, asserted that "It appears more and more likely that

visual experience given by wordless books consistently acts to remove the child, or at least keep him at an unfortunate distance, from both written literature and the value of the oral traditions of story-telling" (p. 294).

Groff's observation is in agreement with other traditionalists who write to suggest the need to revive the art of story-telling with children (Sawyer, 1962; Russ, 1972). Oral story-telling in developing countries, such as Nigeria, is regarded as one of the most cherished cultural heritages which enhance the language development of young children. The need for a revival of oral story-telling should not, however, preclude the tremendous opportunities which wordless picture story books provide for children's cognitive and language development.

Monroe and Rogers (1964) had earlier indicated that "interpreting picture stories encourages the development of visual skills" (p. 52). Greenlaw (1975) asserted that wordless picture books "can serve as a stimulus for visual literacy and for many language experiences" (p. 4). The National Council of Teachers of English recognized the impact of this newcomer (wordless story books) in their national conference in 1974 by joining the Children's Book Council (CBC) in co-sponsoring a program entitled "The Creation and Use of Wordless Books." The results of work by Strandberg and Griffith (1969), Miner (1970), and Fransecky (1969, 1972) appear to demonstrate that students trained in visual literacy methods (using pictures) develop learning strategies

that enable them to remember and relate more than without the use of pictures.

Haber's work with pictorial memory (1970) similarly indicated that humans have a far greater ability to learn from pictures than had been generally recognized. Research such as that of Paivio (1969) demonstrated that the use of pictures for mental imagery can facilitate learning. Gropper (1963) explained why a picture is worth a thousand words, and Elkind et al. (1962) found that perceptual activity could be improved with training. Pictures, according to Levie (1973), are superior to words as cues for eliciting specific responses. Research has rather consistently shown that pictorial recognition memory is superior to recognition memory of words.

Using disadvantaged pre-school children for their study, Swick and Blackwell (1972) suggested that picture analysis could be utilized as a way of involving such children in concrete and social and language experience. Even for adults, pictures make a great appeal and help understanding. The Illinois study of the use of pictures and graphs (1953) includes considerable evidence that magazine articles are more often read if they are illustrated than if they are not.

The importance of the Peabody Picture Vocabulary Test (Dunn, 1959) in diagnosing "verbal intelligence through measuring learning vocabulary" is well known for both research and training readers.

Expression of Feelings

The main focus of the traditional school is on the development of cognitive skills per se. There is not enough affective dimension integrated into the school curriculum. There is little, or in some cases, no time at all for the child to verbally express his interests, his concerns, his fears, his anxieties, and his joys. As a result, children tend to withdraw within themselves as "verbal cocoons" (Johnson et al., p. 82-84). They are then unfairly labelled "dumb." Most elementary or secondary school children think feelings are anti-social, whether they are expressed positively or negatively, and as a result they don't use feeling words. They don't compliment, and they are embarrassed when being complimented. They have no adequate words to express their current emotional situation.

Castillo (1974) described the education that helps the child to develop his ability to verbalize his emotions along with his cognitive development, as "confluent education," i.e., a kind of education where cognition and feeling flow together for the development of the whole child. A child with balanced education and all-around development receives intellectual, environmental and physical learning through "confluent education."

Earlier Wittmer and Myrick (1974) jointly developed a new approach to counseling with children or adults at the University of Florida called "The Person-Centered Approach."

It is an approach to counseling which recognizes the potentials of each individual, gets into direct touch with his feelings and works together with him for positive growth and development. The approach is developmental rather than curative. In the classroom the child is taught to recognize the normalcy in feelings, positive or negative, and is trained to express his and other people's feelings through adequate use of feeling words.

It is the view of humanistic psychologists and educators like Rollo May, Abraham Maslow, Carl Rogers, Sidney Townsend, John Holt, and Ira Gordon that the child should be led to believe in himself through open expression of his feelings and through the development of a positive self-concept. Schools - traditional schools - don't give recognition to this area of the child's input for productive output.

Myrick and Moni (1972), in one of their learning center activities to help elementary school pupils build up a vocabulary of feeling words, used pictures as stimuli to elicit feeling words from elementary school children. They found that children enthusiastically came up with a number of positive and negative feeling words such as "wonderful," "proud," "funny," "love," "angry," and "mad."

In another of their series of counselor workshop programs (1972) they used the language experience approach to train children in adequate expression of their feelings. One of their expressed objectives was to provide an opportunity for a child to communicate his thoughts to the counselor and talk

to others. Using pictures which they considered relatively ambiguous to stimulate imagination and elicit stories, they followed this procedure

1. Pictures are used to elicit a story from a child.
2. The story is tape recorded.
3. The child listens to his story.
4. His story is typed on paper and he reads the words.
5. He discusses his experience with the counselor, then illustrates a part of the story with drawing materials.
6. The experience is shared with teacher, classmate and parents.

They concluded that "a self-developed story, pictures and tapes provide an opportunity to study the progress of a child for there is the possibility of increased positive expression, spontaneity, feeling words and willingness to take initiatives."

Statement of Problem

The present study is not designed to train children in visual literacy or verbalization of ideas. It is essentially comparative and exploratory. It is designed to investigate the differences that may characterize the stories told by children from different cultural backgrounds (in the areas of language and content) to selected fairly culture-free wordless picture story books.

The present researcher, having come from a cultural background where oral story-telling both in and out of elementary school is a well prized cultural heritage, is conscious

of a need in his culture for the promotion of children's literature, visual literacy and developmental counseling. He became fascinated with the emphasis in many elementary schools in the United States on the use of wordless picture story books as an oral language stimulus and so he became interested in investigating to what extent these wordless picture story books can be used in other cultures for the same objective.

The comparative nature of the study is calculated to call attention of educators in different cultures more closely to the possibility and advisability of intensifying training in visual literacy and language development at an early age. Although the role of a biological factor in language acquisition and generally in a child's mental development is not denied, there is a tendency in this study to bring the environmental educational and learning factors to the fore (Prucha, 1973).

Recently, thirty specialists in the field of children's literature . . . authors, publishers, educators, librarians, etc., from 22 countries assembled in Tehran, Iran (May 15-21, 1975) to study ways of

stimulating children's interest for different cultures and traditions, to promote the production and distribution of books likely to further international understanding and generally to promote the production of children's books, particularly in developing countries. . . . The suggestions made included the development of international co-publications with illustrations provided by a common pool. (IRA News Letter, October, 1975)

Such a conference is an indication of a general awareness at an international level of the need for cooperation in the production of literature for children the world over.

An earlier meeting, October, 1970, provided an occasion for a mutual exchange of views by researchers in child language at an international level in Brno, Czechoslovakia (Ohnesorg, 1972). At that meeting several research guidelines were discussed. For instance, concerning the problems of child imitation, Brown and Bellugi (1964) had earlier indicated that the child imitates (for English) mainly "content words" from adults' sentences, while other words are omitted. But Meggye's (1970) report on the examination of the relations between adults' utterances and the child's utterances did not fully support Brown and Bellugi's (1964) hypothesis of selective imitations. He stated that, as a rule, the words which have the "communicative importance" in the utterances are repeated by the child, i.e., mainly nouns, pronouns and verbs, while adjectives are left out. Could this rule apply cross-culturally?

Among other studies which motivated the present investigation is that of Slobin (1973) who suggested that, universally, word order in a child's speech reflects word order in the input language. Also Prucha (1973) proposed a number of areas of differences in speech behavior across cultures.

1. The content of the child's utterances and the type of communicative contexts in which they occur.

2. The social basis of the child's acquisition of various language styles (such as word registers).
3. The characteristics of communication between children and parents and adults.
4. The development of children's speech seen as dependent on conditions in the social-cultural and educational environment.
5. The "communicative profile" of the child, i.e., the intensity and frequency of his communicative acts per day.

It would be interesting to see to what extent the differences in the responses of the three ethnic groups could be related to any of these.

Wordless picture story books, it is believed, can provide sufficient stimuli for a child to demonstrate his creative ability, his power of imagination, and his ability to make his ideas and feelings clear through spontaneous reaction.

Definition of Terms

A. Cross Cultural-Wordless Picture Story Book: The content of a book does not favor one culture more than another in terms of experiential background, either in events, action or characterization. Selection of culture-free picture story books to be used in this study was based on their possible applicability to both American and Nigerian children.

B. Culture: For the purpose of this study, Levi-Strauss' (1963) definition of culture is used: "what is called 'culture' is a fragment of humanity which, from the point of view of the researcher at hand . . . presents

significant discontinuities in relation to the rest of humanity" (p. 295).

C. Linguistic Competence: This refers to the ability of the child to verbalize what he perceives in complete statements, (T-units) and his ability to communicate his thought effectively through adequate use of subordinate clauses, adjectives, colorful verbs, adverbs, prepositional phrases and feeling words.

D. Wordless Picture Story Book: A wordless picture story book strictly contains no texts but pictures which are sequentially arranged . . . "The content of the book is expressed through its images, its visual style reflects the tone, mood and theme of its verbal content" (Sebesta et al., 1975, p. 127). And, according to Breitkreuz (1973), it could be "a series of 3 to 9 pictures, normally depicting logical or continuous actions, situations, thoughts, or scenes in the form of sketches or drawings. . . . To be of value, they should have cultural backing" (p. 145).

E. Visual Literacy: According to Rogers and Ferguson (1973) the National Conference on Visual Literacy (1972) agreed that

visual literacy refers to a group of vision competencies a human being can develop by seeing and at the same time having and integrating other sensory experiences. The development of the competencies is fundamental to normal human learning. When developed, they enable a visually literate person to discriminate and interpret the visible actions, objects and symbols natural, or man-made, that he encounters in his environment. Through the creative use of these competencies, he is able to communicate with others. Through the appreciative

use of these competencies, he is able to comprehend and enjoy the masterworks of visual communications. (p. 45)

"A visually literate person, then, is one who has acquired the ability to make viable judgment about the images he perceives" (Greenlaw, 1975, p. 3).

For the purpose of this study, the definition of visual literacy presented by Greenlaw (1975) served as the basis for assessment of one level of visual literacy of each subject in his/her response to the wordless picture story book. The theoretical definition by Greenlaw has been made applicable in two ways: recognizing things in detail in the picture, and identifying actions that are supposed to be in progress in the picture story.

F. T-Units: A T-Unit is an independent clause including all its constituent constructions such as subordinating clauses of condition, concession, reason, and purpose (Hunt, 1964; Mellon, 1969; O'Hare, 1973).

CHAPTER 2

REVIEW OF LITERATURE

Research on Cross-Cultural Growth Patterns in Cognitive and Language Development

There is considerable evidence that the period between ages five and seven witnesses major changes in cognitive development (Inhelder & Piaget, 1964; White, 1965). Piaget's studies concerning the development of cognition in children have suggested that all children, regardless of cultural boundaries, pass through the same stages of cognitive development, although each child reaches each stage at his own pace. Several studies have supported Piaget's theory: Elkind (1961a, 1961b), Price-Williams (1962), Mohsensi (1966), Prince (1968), Cole, Gay, Click and Sharp (1971). Recent Piagetian research in varying cultures, however, showed both marked similarities and significant differences in performance on cognitive tasks (Boonsong, 1968; Wohlwill, 1968; Heron & Dowel, 1969; Hyde, 1959; Heron & Simonsson, 1969; Poole, 1968; Lloyd, 1971). Because of these marked differences in performance on cognitive tasks, specifically in conservation areas in different cultures, Ashton (1975) concluded that "cross-cultural studies suggest a developmental lag for acquisition of conservation in non-Western, non-industrialized

cultures" (p. 483).

Ashton, despite her conclusions, recognized exceptions in non-industrialized cultures. She used Lloyd's study (1971) in assessing conservation of liquid and number as an illustration. Lloyd studied Nigerian Yoruba children whose ages ranged from three and one-half to eight years. Lloyd found no significant differences in performance between "elite" Yoruba subjects in Nigeria and the subjects of Almy et al. (1966) in the United States. Lloyd's results also indicated that, whereas traditional Yoruba subjects performed significantly lower than their counterparts in the United States on conservation of number tasks, they demonstrated significantly more superior performance on conservation of liquid tests. Thus Lloyd's study indicated that although there are significant differences between Western industrialized cultures and non-Western, non-industrialized cultures in some cognitive areas, there are some areas of cognition where the non-industrialized cultures demonstrate superiority. Similarly, de Lacey's study (1971) on classification ability and verbal intelligence among high-contact Aboriginal and low socio-economic white Australian children confirmed a trend detected in an earlier study for high-contact Aboriginals to perform on classification tasks at about the same level as white children in a similar environment. The Aboriginal subjects' verbal I.Q. scores were markedly lower, however.

Piaget's study (1926) found children's language to be primarily egocentric before age eleven or twelve, while Ruff et al. (1929) classified children's language under such dimensions as: self-assertion, perception and linguistic experimentation. Children's development of the skills involved in the perception of pictures has been studied by Ames (1953). He observed how children aged 2 to 10 years of age responded to the Rorschach Test. The youngest age group tended to give responses which had little relation to the blot and as age levels rose there was consistent increase in the genuine percepts involving the blot as a whole. Elkind (1964) presented children 4 to 9 with drawings in which both parts and whole had definite meanings. This latter study showed that parts were perceived at an earlier age than wholes, and that the parts had become integrated into the whole by the age of 9. Thus, research has established that, as the child grows older, his capability of handling complex stimuli increases.

Ashton (1975) postulated that social influences upon cognitive development have received less attention than have the effects of schooling and suggested the social area as a fertile field for future investigation. Among topics she suggested were: the differential effects of social environment upon various cognitive processes, the effect of culture on moral development, and the effect of the cultural concept of reality vs cognition.

Other studies of Nigerian children relevant to this study are those of Pool (1968), who compared 150 school

children of the Hausa tribe in Nigeria with 40 children from a large junior school in the suburbs of a southern English city. The English subjects were reported to have performed significantly better on tests of conservation than did the Hausa children. Ashton suggested a thought-provoking reason for the significant difference in performance. She questioned if the difference emanated from a failure of the assessment method -- "that is, culturally inappropriate task materials and concomitant lack of motivation -- or whether it is due to real cognitive differences between cultures?"

The study by Cole, Gay, Glick and Sharp, of Kpelle children in West Africa (1971) suggested that "Cultural differences in cognition reside more in the situations to which particular cognitive processes are applied than in the coexistence of a process in one cultural group and its absence in another" (p. 322).

In his study on classification tasks, Price-Williams (1962) made a comparison of 80 literate and 60 illiterate children of the Tive tribe in Nigeria whose ages ranged from six to eleven years. The children were asked to sort models of animals known in their area and plants actually picked from their neighborhood. There was no significant difference between the performance of the two groups of Tive children. His study suggests that literacy added not much to the ability of Tive children to do concrete operational thinking. By implication, his findings support Swick and Blackwell's (1972) findings that children react and verbally respond more to

pictures which are representative of their own cultural setting, school attendance notwithstanding. Greenfield and Bruner (1966) on the other hand, demonstrated that unschooled Wolofs of West Africa were unable to recognize differing point of view.

Abiola (1965), from his study of Yorubas children from traditional (OJE) and educated (Elite) homes concluded that the advantage which children from economically and intellectually privileged environments had over their less fortunate counterparts was greatest at three years of age but diminished by five years. Abiola's convergence hypotheses were investigated by Lloyd (1971). No evidence of convergence which reached an acceptable level of significance was found.

Lesser, Fife and Clark (1965) studied differential and mental abilities, including verbal ability, reasoning, number facility and space conceptualization, as they relate to social class and ethnic group membership. A large number of first grade children was divided into middle and lower class socio-economic groups according to their ethnic background: Chinese, Jewish, Negro or Puerto Rican. Social class placement was associated with significant differences in ability pattern. The pattern of performance within ethnic subgroups was similar across social class levels. Ethnic groups also apparently place differential importance upon skills, depending on the child's sex. The findings of Lesser et al., suggest that ethnic group membership, the child's sex and the pattern, as well as level, of performance must be taken into consideration when planning intervention programs.

Torrance (1961) identified the following characteristics as playing some role in children's creative process generally: verbal fluency, non-verbal fluency, originality, inventiveness, constructiveness, elaboration, curiosity and hypothesis formation.

Studies of Children's Oral Responses to Pictures

Loban, from 1952 to 1963, conducted longitudinal research with 338 kindergarten children, using a series of six pictures to stimulate verbalization and also autobiographical interviews. According to his report (Loban, 1963), set out to answer the following questions:

1. Just as in physical development, are there predictable stages of growth in language?
2. Can definite sequences in language development be identified?
3. How do children vary in ability with language and gain proficiency in using it?

Some of his conclusions, which served as a guide in the selection of the age level and environment of subjects for the present study and also the climate in which collection of data was done, are as follows:

1. Readiness and smoothness of speech are part of proficiency with oral language.
2. In respect to vocabulary, children with large and readily accessible vocabularies would find expression easier than those with limited vocabularies.

3. Categories devised for studying the function of language will always depend upon the purpose of the investigation and the situation from which the language sample is drawn.

Bear (1939), Heider and Heider (1940) and LaBrant (1933) have designated the use of subordination in language as an indicator of a more mature and difficult form of language expression than simple parallel statements connected by "and" or "but," and it makes possible a more coherent organization of related statements. Lamme's exploratory study (1975) on the effect of age on story-telling supports this conclusion. Prucha (1973) reported concerning the crucial problem of the nature of the child's language ontogenesis -- whether it is predominantly "learned" or based on an inborn capacity for speech. "Researchers in socialist countries generally advocate a view that while certain psychophysical mechanisms of language are doubtless inborn, a decisive role in language ontogenesis is played by the child's active learning and its socio-cultural and historical determinants." In other words, the role of the biological factor in language acquisition (and generally in the child's mental development) is not denied," but there is a tendency to bring the environmental, educational and learning factors to the fore" (p. 79).

Janes (1972) suggested that "in order to elicit oral responses of sufficient length and complexity to permit adequate analysis" of children's oral language, the following process may be considered:

1. The use of a live animal in a cage available for pupil's observation and discussion for at least one hour.
2. A picture drawn by a pupil after a meaningful classroom experience.
3. A general non-cueing direction such as: What is happening? Tell me a story about this.

According to Janes, the above devices can stimulate a pupil to explain what he thought about the situation, using his own insight, vocabulary and sentence pattern.

Root (1975) applied Janes' "general non-cueing direction" to elicit stories from six-year-olds, using wordless picture story books. His study attempts to explore the readability of wordless picture story books. Simpson (1974) analysed stories which kindergarteners to 4th-graders told to wordless picture books and categorized their responses under character, plot, setting, conversation, inaccuracy, digression and theme. She found that responses increased across grade levels, and her second grade subjects' stories showed frequency in elaborated events and character identification. Lamme (1975) in an exploratory study used two wordless picture story books to investigate the nature of the stories children of various ages tell to wordless picture books. Her conclusions were

1. Older children tell longer stories and stories with more words per sentence than younger children.
2. Other children tell stories with better developed plot and characterization.
3. Complexity in language is not significantly related to the age of the story teller.

Selection of Appropriate Pictures for Pupils to Talk About

Gibson (1971) postulated that since surrogates (words or pictures) are always produced by one person and arouse perception in another, what they arouse will depend upon the clarity of the original producer's perceptions. In his opinion "Visual education must be based on the premise that every picture is a statement. The picture does not present the object itself, but a set of propositions about the object or, if you prefer, it presents the object as a set of propositions" (p. 110).

The Influence of Color

A body of research elucidates the influence of color in promoting or obstructing visual literacy and learning when pictures are involved. Travers and Alvarado (1970) concluded that color facilitates the perception of dynamic features in a picture and Dwyer (1972) similarly found that color facilitated recall, discrimination and performance. Conversely, Kenner (1968) reviewed a long list of studies of the use of color in T.V., and he generalized that color does not normally result in greater cognitive learning.

Scanlon (1967, 1970) assessed how students reacted to color versus black and white by analysing their written description of programs. He found that those children who were exposed to color pictures made more mention of color than any other thing they saw, whereas the black and white group wrote longer and more detailed reports, referring more often to items in the sound tracks.

Dwyer's research (1972) explained the occasional superiority of color in some cases. He concluded that such cases may have been due to the possibility that color served to accentuate details relevant to the learning objects. It might also be that the use of color made visuals more attractive so that students attend to them more diligently. Hawkins et al. (1970) were drawn to their conclusion in favor of color when they allowed subjects to peruse color and black-and-white graphics, and they found that subjects were drawn more readily to color than black and white.

Rudisill's study (1952) sought to determine whether or not color enhanced perception of realism. Using illustrations found in children's books, she suggested that a child looks at a picture primarily to recognize its content, and that he/she utilizes color cues to enhance his/her conception of reality only after considerations have been satisfied. Rudisill (1952), however, warned that if color be used at all in picture illustration, pictures should be realistically colored. Presenting realistically colored, unrealistically colored and uncolored illustrations to a group of young children, she found that the children not only preferred the realistically colored, but also preferred the uncolored illustration to the unrealistically colored ones. She concluded that "the preference for realistic presentation increases with age."

Factors in Visual Literacy

Research over the years has suggested with convincing consistency that the level of visual literacy of individuals, particularly when pictures are involved, depends largely on individual differences, complexity and level of fidelity of the picture and, of course, the age of the viewer. Hanes (1973), reviewing a long list of studies on how children learn from pictures, concluded "It may be expected that perception is affected not only by one variable inherent in the stimulus array, but also those attributes of the learner involved in the perceptual process." Elkind et al. (1969) presented drawings in which both parts and wholes had well defined meaning to a group of children. The figures used included an arrangement of vegetables that looked like fish, an arrangement of fruits that looked like a human figure and two giraffes whose necks were curved together in such a way that the space between them formed a heart. The children, ages 4 to 9, were asked to tell what they saw. The data showed that parts were perceived at an earlier age than wholes, and that the parts had become integrated into the whole by the age of 9. They concluded that correct interpretation of pictures depended much on the recognizability of the parts and the recognizability of the whole. Piaget and Inhelder (1956) had earlier indicated that, as the child grows older, his capability of handling complex stimuli and his preference for interpreting the material as a whole increases. Everett and Armstrong (1968) postulated that older

children are better able to utilize pictorial cues than younger ones. Similarly Ames (1965) and White (1960) examined perception, discrimination and visual exploration in infants. Ames found that as the infant developed, his eye fixations become more frequent and shorter.

Conversely, however, Meili-Dworetzki (1956) found that the whole was recognized at an earlier age than the parts, although he agreed with Elkind (1964) that parts and whole would have to have equal recognizability if the generalization is to hold that parts are perceived first and whole later. Also Vurpillot (1968) required children of various ages to discriminate between similar drawings. He found that children over 6 years of age became much more systematic in their use of fixation to make paired comparison. There is considerable evidence that the period 6 to 7 witnesses major changes in cognitive development (Inhelder & Piaget, 1964; White, 1965). Wolf (1970), on the other hand, found no significant relationship between the ages of subjects and the type of eye movement they displayed. As Hutton (1973) summarized the result of Wolf's research (1970), Wolf found that intelligence was related significantly to certain eye movements. "High I.Q. subjects," she suggested, "demonstrated more ability in viewing pattern from scene to scene than did low I.Q. subjects" (p. 32). Caban (1971) and Coffing (1971) both demonstrated that individuals differ in eye movement strategies and that these strategies provide predictors of learning when alternative stimuli are available. French (1952) studied preference for

pictures of varied complexity. Using 13 paired pictures with each pair containing a simple and a complex picture and using children ages 6 to 11 years, of varied socio-economic background, he found an increase in preference for complexity with age. First grade children consistently preferred the relatively simple picture. He found almost complete similarity between boys' and girls' responses, except for a slight and statistically insignificant tendency for girls to prefer the simpler illustration.

The Relationship of Age

Other researchers have supported the postulate that the ability to react intelligently with complex pictures depends on age (Hutt and McGraw, 1969). Hutt and McGraw (1969) reported that 5-year-olds viewed simple figures longer, 11-year-olds viewed complex figures longer, but 8-year-olds show no difference in viewing time. Young children are said to have a problem in space perception. They cannot easily recognize the spatial order in the world, nor can they adequately utilize the information provided by the order. Ames et al. (1953) observed how children, ages 2 to 10, responded to the Rorschach test. The very young ones tended to give responses which had little relation to the blots and concluded that the extraordinary complexity of the typical Rorschach blot may be beyond the ability of most pre-school children. The same study was said to have demonstrated increasing frequency of the tendency of children to identify details as they grew

older. Findings by Davidson and Adam (1970), Robert and Kroppen (1969), Milgram and Riedel (1969), Stevenson and Siegel (1969), and Dilley and Paivio (1968) all go to support the same contention that older children learn more from pictures than younger ones.

Contradictory evidence abounds. Black (1962), for instance, showed that learning is facilitated by increasing the redundancy of relevant learning cues while Travers (1969) showed that the addition of interior detail and shading to outline drawings increases their recognizability. He argued that what are usually considered as very simple pictures contain a good deal of redundancy. Spitz and Bornald (1971) indicated that adults are able to identify line drawings of objects with 50% information blacked out, blacking out being a kind of complexity.

The Relationship of Cultural and Socio-Economic Background

In selecting pictures that will aid training in visual literacy, research also suggests consideration of the cultural and socio-economic background of the children. The study of Swick and Blackwell (1972) is a case in point. They presented a number of children with pictures which depicted lower, middle and upper social and economic class living patterns, exposure being thirty minutes. The idea of presenting these pictures to the children was to stimulate thinking and verbal expression toward familiar and unfamiliar cultures. The researchers examined both linguistic pattern and social

perceptions. Their interest was to see if the use of pictures could stimulate language and social learning among young, pre-school culturally disadvantaged children. They found that, the less familiar the picture, the less often the children responded. The children were more creative and more verbose when dealing with pictures which represented their own cultures and life styles. Similarly, Cole et al. (1971) and Dasen's study (1973) draw researchers' attention into the contextual effects that may be derived when research is carefully designed with regard to the characteristics of the specific culture, using materials familiar to the culture.

Miller (1938) found that the teacher had to direct the children to the important items in the pictures if pictures were to be of value. Reporting a research which involved one hundred third-graders, he said the items in pictures presented to them were scanned in isolation rather than as parts of the unified whole. Most of the children could describe correctly only 19.5% of the main items of a picture - the items which gave the picture its meaning.

Sawyer (1949) asserted that the art of story-telling lies within the story-teller. According to her, this art is compounded from certain variables such as experience, creative imagination and a gift for selection which comes partly out of experience. Under all good story-telling, she concluded, "lies the common denominator of racial inheritance" (p. 36).

It is the belief of Charles Morgan that "Children are the freest, the most universal creators. Left unhampered, a

child begins very young to put into everyday life a series of masterpieces of creative thinking and doing" (Sawyer, 1949, p. 115). Therefore, despite Miller's (1938) findings concerning the need for some intervention as the child reacts to the pictures, Sawyer argued that such intervention should not impair originality and creativity.

Manzo and Legenza (1975) attempted to propound a Picture Potency Formula (PPF). They based their scaling of potency of pictures on the following dimensions: number of different things in the picture, number of significant things, total number of all things, number of different colors, number of actions in progress, number of children present, total number of people present and the total number of things with potential for movement (other than people). In their ratings they recognized the strong heuristic value of animals and advised that the number of animals be given double rating.

In the present researcher's review of the literature he discovered that no studies have been conducted comparing three ethnic groups in the dimensions of visual literacy and language development. Therefore, it was the objective of his study to explore this area. The literature review supplies the basis on which this study has been designed. Care was taken to let previous findings and conclusions serve as a guide in the selection of the age level of subjects for the study and as a basis for the hypotheses tested. The review of previous research also served as a basis for the selection of appropriate wordless picture story books for the study.

CHAPTER 3

DESIGN AND PROCEDURE

The major purpose of this study was to investigate how culturally different children tell stories to selected wordless picture story books and to identify areas of significant differences (visual literacy or language) in North Floridian American and Western Nigerian 7-year-olds' responses to the same wordless picture story books. Wordless picture story books, it is believed, can provide adequate stimuli for a child to demonstrate spontaneously his ability to do creative thinking, show his power of imagination, and verbalize spontaneously his ideas and feelings as he reacts to the sequentially arranged pictures that tell a story (Cianciolo, 1973; Swick & Blackwell, 1973; Debes, 1968).

Three cultural groups were involved. Samples of pupils were obtained from several elementary schools which, in the opinion of educators, provided balance among the three cultural groups for ethnicity, sex and socio-economic backgrounds of subjects.

Subjects were asked to tell stories in their first language to two wordless picture story books, which, in the opinion of a panel, were fairly culture-free in terms of their appropriateness in content for urban Nigerian and urban North

Floridian children. The subjects' stories were tape recorded for analysis. The first story recording provided the subject with an opportunity to practice telling a story to a wordless picture book and also served to establish rapport with the interviewer. Kagan (1969) emphasized the advantages in initial establishment of rapport with subjects, when he referred to the success of Palmer as a researcher. "Palmer regularly delayed testing until the child is relaxed and has established rapport with the tester." The second story was analyzed under two major variables: visual literacy and linguistic competence. The visual literacy variable has two dimensions: namely, seeing details in pictures, enumeration of things found in the picture story (these may be things with or without potentials for movement), and also the subjects' ability to identify actions in progress in the story. The other variable, linguistic competence, has seven dimensions: number of T-units in the subjects' story, ability to use subordinate clauses, colorful verbs, adjectives, adverbs, prepositional phrases and feeling words. Each dimension provided a separate hypothesis for testing.

Hypotheses to be Tested

The study was designed to test the following hypotheses for significance at the .05 level.

A. Visual Literacy Hypotheses

- Ho 1. There will be no significant difference between the mean score of boys and the mean score of girls on each of the two visual literacy

dimensions.

- Ho 2. There will be no significant difference in the mean scores of Western Nigerian, Black American and White American 7-year-olds on each of the two visual literacy dimensions.
- Ho 3. Sex and ethnicity interacting together will have no significant effect on the mean scores on each of the two visual literacy dimensions.

B. Linguistic Competence Hypotheses

- Ho 4. There will be no significant difference between the mean score of boys and the mean score of girls on each of the seven linguistic competence dimensions.
- Ho 5. There will be no significant difference in the mean scores of Western Nigerian, Black American and White American 7-year-olds on each of the seven linguistic competence dimensions.
- Ho 6. Sex and ethnicity interacting together will have no significant effect on the mean scores on each of the seven linguistic competence dimensions.

Research Design

Subjects. These were from three ethnic groups: white Floridian American, black Floridian American, and Western Nigerian 7-year-olds. There were thirty subjects from each ethnic group, or a total of 90.

- 15 white Floridian American boys
- 15 white Floridian American girls
- 15 black Floridian American boys
- 15 black Floridian American girls
- 15 Western Nigerian boys
- 15 Western Nigerian girls

The Nigerian subjects were 7-year-old boys and girls in their second year of elementary schooling. Their first language is Yoruba, a Western Nigerian tribal language, and they attended school in Abeokuta, a Western Nigeria city. Their parents had at least a high school education or its Nigerian equivalent (the University of London General Certificate of Education O/L), and they were urban.

The American subjects were black and white 7-year-old North Floridians in their second year of elementary schooling in Gainesville, Florida. Their first language is English (black American English or white American English (Labov's argument (1970) on the functional equality of languages is taken to account here), and they were urban.

Sampling process. The list of all-urban 7-year-olds at the Trinity Primary School and the Baptist Day School, Idi Aba, Abeokuta whose parents have read up to high school, was obtained. Forms requesting consent were distributed to their parents. There were only 17 girls and 25 boys available for study. Instruction was given to research assistants in Nigeria to record stories from all available subjects. One girl refused to take part in the exercise, and another did not turn up for a second story. This left the researcher with 15 girls' stories to work with. Four boys did not return to tell their second story. The names of the 21 boys who completed the second story were arranged in alphabetical order, and the table of randomization was used to select 15 of them (Walker & Lev, 1958, p. 200).

The American subjects were obtained from three schools. In the first school, 100 informed consent forms were sent out to parents. Only 21 came back authorizing the use of 21 children for the research purposes. In the second school, 50 informed consent forms were sent out, and only four parents gave permission that their children be used. The third school supplied the other required number of subjects less two -- a boy and a girl. The researcher succeeded in obtaining the other two in a Sunday School class at a church he attended. This, in essence, means that all the American subjects available participated in the study. No randomization was necessary. All of those American subjects involved in the study, however, satisfy all conditions stipulated in the research design--they are 7-year-olds, urban, and parents have at least high school education.

Research assistants and data collection. Miss Nita R. McCullough, a Floridian American serving as a Missionary tutor at the Baptist Women's College, Abeokuta, Nigeria and an A.B. graduate from Florida State University in Tallahassee, Florida and Ed.S. graduate of Peabody Teacher's College, Nashville, Tennessee, helped in obtaining data, using student teachers of the Baptist Women's College, Abeokuta, Nigeria. She was assisted by Mrs. C. O. Omotoso, the wife of the researcher, and headmistress of an elementary school in Abeokuta, Nigeria.

To collect data in America, selected students in the Early Childhood Education program at the University of Florida

were trained to gather tapes of stories from American subjects. There was a standard direction (Appendix A) for research assistants in Nigeria and America. In America, black research assistants collected data from black subjects, and white research assistants collected data from white subjects. Data collected that deviated from the standard procedure (Appendix A) were disqualified in the study.

Selection of wordless picture story books used. Two books were used in data collection. The first book was to acquaint the research assistants with the process of data collection and also to give the subjects some practice in telling stories to a wordless picture story book. Although the two stories each child told were tape recorded, only the story told in response to the second book was analyzed for the purpose of this study. In selecting the wordless picture story books used, the following procedure was followed. The researcher selected seven possible books which, in his judgment, are most cross-cultural in content and which satisfied the recommendations of the literature. They included the following:

- A. Mercer & Mariana Mayer A boy, a dog, a frog and a friend. New York: The Dial Press, 1971.
- B. Mercer Mayer Frog goes to dinner. New York: The Dial Press, 1974.
- C. Mercer Mayer Frog, where are you? New York: The Dial Press, 1969.
- D. Mercer & Mariana Mayer One frog too many. New York: The Dial Press, 1975.
- E. Byron Barton Where is Al? New York: The Seabury Press, 1971.

F. Willi Baum Birds of a feather. Mass: Addison-Wesley Publishing Co., Inc., 1969.

G. Ezra Jack Keats Kitten for a day. New York: Franklin Watts, Inc., 1974.

The seven books were rated using Manzo and Leganza's (1975) Picture Potency Factor Scaling (PPFS) for their language stimulation value. Two of the seven books were eliminated on the basis of these ratings.

The remaining five books were submitted to a panel of two Nigerian couples who were teachers in elementary schools before they came to study at the University of Florida and a visiting lecturer from the University of Ibadan, Nigeria. There were also two American educators on this panel of evaluators. Panel members were asked to rate each book on a basis of its appropriateness in content for urban Nigerian and urban North Floridian children. The two books with the highest rating selected for use in this study were:

- A. Mercer and Mariana Mayer A boy, a dog, a frog and a friend. New York: The Dial Press, 1971.
- B. Mercer Mayer Frog, where are you? New York: The Dial Press, 1969.

Frog, where are you? was used for a practice exercise.

Stories told to A boy, a dog, a frog and a friend were analyzed for the purpose of this study. The appropriateness of the book for Nigerian subjects is found in the presence of Tortoise as a major character in the story. Nearly all Yoruba folk tales have something to do with the Tortoise and his wisdom, tricks and mischief. The Yorubas recognize this in their traditional saying: Alo, alo, alo ki ise lori Alabaun (Almost all Yoruba

folk tales contain a tortoise).

Variables for analysis. The subjects' responses were analyzed under two main independent variables, namely, visual literacy and linguistic competence. Variable measurement was based on the following criteria:

A. Visual Literacy Variables

1. Recognition of different things -- Scores on this variable were based on the number of different things recognized in the pictures in relation to the total number of things identifiable in the Wordless Picture Story Books (Appendix B). Scores show how each child can attend to details.
2. Recognition of actions in progress -- This variable is measured by the number of actions in progress recognized in relation to the total number of actions in progress identifiable (Appendix C). Scores show how much each child can identify relationship in pictures and infer actions in progress therefrom.

B. Linguistic Competence

The variables under this category show how fluent each child is, his communication power, his word power and his syntactic maturity. The measure of this variable was based on the mean scores on the following items for each of the ethnic and sex groups.

1. The total number of T-units used in response to the pictures in the Wordless Picture Story Book. Previous researchers on children's language who used this variable to measure linguistic competence include: Loban (1961, 1963) who called it Communication Units; Hunt (1965) who called it T-units; and O'Hare (1973) who also called it T-units. O'Hare described a T-unit as one main clause plus any subordinate clause or non-clausal structure that is attached to or embedded in it. (p. 21)

Children's groups of words that showed thought units in this study were counted as T-units without penalizing the child for any of Bereiter's (1966) "series of badly commuted words" (Labov, 1971, p. 171), or in common language, "bad grammar."

For examples:

- (a) "The boy fishing here."
- (b) "And biting the turtle paw, here," are acceptable T-units in this study.

2. The ratio of the number of subordinate clauses used to the total number of T-units. Subordinate clauses may be noun, adjective or adverb. Recognition was given in this study to subordinate clauses that were contrasted or embedded, e.g., "The boy sitting on the bank is fishing." (The boy who is sitting on the bank is fishing). This is in agreement with O'Hare (1974).

Hunt (1965) counted direct quotations as clauses. O'Hare (1974) counted them as direct objects. This study counts them as clauses in agreement with Hunt.

Fragments of sentences that conveyed no meaning at all (mazes were discarded (O'Hare, 1974)).

O'Hare (1974) obtained his "Clause Per T-units" by dividing the number of subordinate and main clauses by the number of main clauses. This study scored subordinate clauses on the basis of the ratio of subordinate clauses used to the number of T-units made.

3. The ratio of the total number of colorful verbs used to the total number of T-units made. Such colorful verbs are illustrated by expressions such as "He was hooked by the turtle." "The turtle grabbed his foot." "The boy splashed into the water."
4. The ratio of the number of different adjectives used to the total number of T-units made. Any words that described or gave specific identity to a noun, were counted. These included possessive nouns, i.e., "The boy's foot," and possessive pronouns.
5. The ratio of the total number of adverbs used to the total number of T-units. All words that indicated how, where, when, reason, were counted as adverbs. These included onomatopoeic language used by children, e.g., He went "cut cut." The dog walked "whumper whumper."
6. The ratio of the total number of prepositional phrases used to the total number of T-units.

7. The ratio of the total number of feeling words used (i.e., showing cause and effect) to the total number of identifiable actions in progress.

Feeling words anticipated were positive or negative (Myrick, 1972, Appendix D).

Rationale for Data Analysis

Visual literacy. Children who are able to see details in the pictures, see relationships between one page of the picture story book and the next, have creative imagination and exhibit a sense of humor, are demonstrating the qualities of a visually literate person (Roger & Ferguson, 1973; Cianciolo, 1973; Greenlaw, 1974). The development of visual literacy is fundamental to human learning. It is a competency that helps an individual to sound viable judgments about the images he perceives. The concern of this study is not to train children in visual literacy, but to serve as a comparative and exploratory measure and to present a case for greater emphasis on training in visual literacy and oral language skills.

Linguistic competence. The total number of T-units and also the mean length of T-units will reveal ability of each child to verbalize his thinking about the images he perceives. The total number of subordinate clauses may demonstrate each child's ability to use more mature language expression than the simple statement joined by connectives, "and," "but," and "then" (Bear, 1939; Heider & Heider, 1940; LaBrant, 1933). The total number of colorful verbs will demonstrate each child's ability to use picturesque action words, e.g., rather than say, "He ran out of the room," the child might say, "He flew or

zoomed out of the room." The child's use of adjectives will demonstrate his descriptive power, e.g., describing sizes, color, shapes and the qualities of objects in degrees. The ability of each child to use prepositional phrases and adverbs will indicate his concept of time, position of things or people, movements and manner in which actions are performed. The ability of each child to use feeling words will be indicative of his sense of cause and effect. Feeling words are adjectives that describe the emotional state of characters in the story as a reaction to particular identifiable action of other characters in the story, e.g., "He hit him, therefore he is unhappy." "he has a weird look on his face because he is scared." Other such feeling words anticipated could be any of those in Appendix D.

Coding Reliability and Cross-checking of Analysis

For the purpose of coding reliability of visual literacy variables, a graduate student in a language arts course with a major in Speech checked for the number of things identifiable in the picture stories, and the total number of identifiable actions in progress. She also independently analyzed the stories for linguistic variable scores. Both the researcher and the graduate student identified 45 things altogether in the picture story and also a total number of 80 actions that are possibly in progress in the story (Appendices B and C).

Inter-rater reliability was computed using a regression approach and the reliability coefficient on each one of the

variables measured was very high (See Table 1).

Similarly, a Yoruba-speaking visiting lecturer worked with the researcher for purposes of inter-rater reliability on the scores of Yoruba subjects. After independent scoring and running a regression of his scores on the researcher's in each one of a total of 9 dimensions, the reliability coefficient was found to be very high (Table 1).

Comparison of the Three Ethnic Languages

Although it cannot be argued that the three languages analyzed are identical in structure and complexity, there is a strong basis for valid comparison of the responses of subjects in these languages. The following conclusions from Greenberg (1964), in a study on universals in language, supply a basis for comparison. As summarized in Destefano et al. (1974)

1. All languages use nominal phrases and verbal phrases, corresponding to the two major classes of noun and verb, and in all of them the number of nouns far exceeds the number of verbs. One can be fairly sure that a noun in one language translates a noun in another.
2. All languages have modifiers of these two classes, corresponding to adjectives and adverbs.
3. All languages have ways of turning verbal phrases into nounal phrases (He went -- I know that he went).
4. All languages have ways of making adjective-like phrases out of other kinds of phrases (The man went -- The man who went).
5. All languages have ways of turning sentences into interrogatives, negatives, and commands.

6. All languages show at least two forms of interaction between verbal and nominal, typically "intransitive" (the verbal is involved with only one nominal, as in Boys play) and "transitive" (the verbal is involved with two nominals, as in Boys like girls). (p. 23)

Slobin (1972) also asserted that children learn languages the same way all around the world.

TABLE 1
Inter-Rater Reliability

List of Dimensions	English	Yoruba
Number of things ratio	.96	.97
Actions in progress ratio	.98	.99
Number of T-units	.99	.96
Subordinate clauses ratio	.96	.99
Colorful verbs ratio	.92	.96
Adjectives ratio	.97	.97
Adverbs ratio	.98	.99
Prepositional prepositional ratio	.99	.99
Feeling words ratio	.99	.99

CHAPTER 4

RESULTS

Visual Literacy Variable 1 - Recognition of Things

The hypotheses tested under this visual literacy dimension were

- Ho 1. There will be no significant difference between the mean score of boys and the mean score of girls on the visual literacy dimensions of recognition of things in the wordless picture story book.
- Ho 2. There will be no significant differences among the mean scores of Western Nigerian, black American and white American 7-year olds on the visual literacy dimension of recognition of things in the wordless picture story book.
- Ho 3. Sex and ethnicity, interacting, will have no significant effect on the mean scores on the visual literacy dimension of recognition of things in the wordless picture story book.

To determine whether there was any significant difference in the mean scores of the sex and ethnic groups under this visual literacy dimension, a 2x3 analysis of variance was run. Data are shown in Tables 2, 3, and 4.

TABLE 2

Visual Literacy Variable 1 - Recognition of Things.
 Analysis of Variance on Scores of the
 Three Ethnic Groups

Sources	SS	df	MS	F ²	Sig. of F
Main Effects:					
Sex	31.141	1	31.141	0.579	0.999
Ethnicity	188.088	2	94.004	1.748	0.178
2-Way Interactions:					
Sex-Ethnicity	36.809	2	18.404	0.342	0.999
Residual	4462.461	84	53.565		
Total	4720.242	89	53.639		

- ²F - ratio required at .05 for
 Sex main effect (df:1, 34): 3.9
 F - ratio required at .05 for
 Race main effect (df:2, 84): 3.07
 F - ratio required at .05 for
 2-way interactions Sex-Ethnicity
 (df:2, 84): 3.07

TABLE 3

Visual Literacy Variable 1 - Recognition of Things.
Scores of Ethnic Groups

Statistics	White Floridian Boys and Girls	Black Floridian Boys and Girls	Western Nigerian Boys and Girls
Mean	27.9	25.4	24.4
Variance	54.2	33.7	70.8
Range	26.7	24.5	28.9
Std. Error	1.3	1.1	1.5
Kurtosis	0.3	-0.4	-1.1
Minimum	20.0	13.3	8.9
Std. Dev.	7.4	5.8	8.4
Skewness	1.0	0.3	0.0
Maximum	46.7	37.8	37.8

TABLE 4

Visual Literacy Variable 1 - Recognition of Things.
Scores of Ethnic/Sex Groups

Statistics	White Floridian Boys	White Floridian Girls	Black Floridian Boys	Black Floridian Girls	Western Nigerian Boys	Western Nigerian Girls
Mean	27.8	27.9	25.3	25.7	22.9	26.0
Variance	58.6	53.7	34.3	35.4	83.3	57.6
Range	24.0	26.7	20.0	20.0	26.7	25.0
Std. Error	1.9	1.9	1.5	1.5	3.4	2.0
Kurtosis	-0.5	1.4	-0.6	-0.2	-1.1	-1.0
Minimum	20.0	20.0	13.3	17.8	8.9	12.8
Std. Dev.	7.7	7.3	5.9	5.9	9.1	7.6
Skewness	0.8	1.4	-0.2	0.9	0.3	-0.1
Maximum	44.4	46.7	33.3	37.8	35.6	37.8

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Visual Literacy Variable 2 - Recognition of
Actions in Progress

The hypotheses tested under this dimension were

- Ho 1. There will be no significant difference between the mean score of boys and the mean score of girls on the visual literacy dimension of recognition of actions in progress in the picture story.
- Ho 2. There will be no significant differences among the mean scores of Western Nigerian, black Floridian and white Floridian 7-year-olds on the visual literacy dimension of recognition of actions in progress in the picture story.
- Ho 3. Sex and ethnicity interacting together will have no significant effect on the mean scores on the recognition of actions in progress in the picture story.

In determining whether or not there is a significant difference among the ethnic and sex mean scores on recognition of actions in progress, a 2x3 factor analysis was run. Table 5 shows that there is no significant difference between the sexes in their scores on the recognition of actions in progress in the story. There are significant differences in mean scores of the ethnic groups under this dimension. Interaction of sex and ethnicity indicates no significant difference.

To find out where the significant ethnic difference lies, a post hoc test applying Tukey's (1961) Honestly Significant Difference (HSD) in mean scores was administered to the ethnic mean scores. Results are presented in Table 6.

The homogeneous subsets show that the Floridian American black subjects and the Western Nigerian subjects are on the same level in their ability to verbalize action in progress in the picture story book. There is no significant difference

TABLE 5

Visual Literacy Variable 2 - Recognition of Action in Progress
Analysis of Variance on Scores of the Three Ethnic Groups

Sources	SS	df	MS	F ^a	Sig. of F
Main effects					
Sex	165.924	1	165.924	0.874	0.999
Ethnicity	4132.973	2	2066.986	10.886*	0.001
2-Way Interactions:					
Sex-Ethnicity	393.441	2	196.721	1.036	0.361
Residual	15949.637	84	189.877		
Total	20642.973	89	231.944		

^aF - ratio required at .05 for
sex main effect (df:1,84): 3.92

F - ratio required at .05 for
ethnicity main effect (df:2, 84): 3.07

F - ratio required at .05 for 2-way inter-
actions sex - ethnicity (df:2, 84): 3.07

* Significant at or beyond .05 level

TABLE 6

Visual Literacy Variable 2 - Recongnition of Action in Progress.
Post Hoc Comparison of Ethnic Mean Scores

Tukey's Honestly Significant Difference Procedure (HSD)

(1) Analysis of Variance

Source	df	SS	MS	F Ratio ^a	F Prob
Between Groups	2	4134.0000	2067.0000	10.892*	0.000
Within Groups	87	16509.6250	189.7658		
Total	89	20643.6250			

^aRatio required

*Significant at or beyond .05 level

(2) Homogeneous Subsets^b

Subset 1	Group	Group 3	Group 2
	Mean	29.45	36.91
Subset 2	Group	Group 1	
	Mean	24.0	

^bSubsets of groups, no pair of which have means that differ by more than the shortest significant range for a subset of that size.

(3) Tukey's HSD

		White American	Black American	Western Nigerian
		46.03	36.91	29.45
White	46.03		9.12*	16.57*
Black	36.91			7.45
Nigerian	29.45			

Ranges for the .05 level: 3.37 3.37

SEX = 2.52

HSD = 8.39

*Significant at or beyond .05 level

between their mean scores. The white Floridian subjects constitute a subset. They performed significantly better than either the Western Nigerian subjects or the black Floridian subjects in their ability to recognize action in progress in the picture story.

Although the percentage mean scores of the three groups are not high, the performance generally supports the view of Inhelder and Piaget (1964) and White (1965) that the period 5 to 7 years witnesses major changes in cognitive development. The subjects were able to do intelligent imagining, see cause and effect in the sequential arrangement of the pictures, and suggest the trend of the story. The statistical analysis of the scores of the ethnic groups supports Ho 1 for this dimension. There is no significant difference between the sex scores. However, Ho 2 is not supported. There is significant difference in the ethnic mean scores in their ability to recognize actions in progress in the story. Ho 3 is supported. Interaction of sex and ethnicity demonstrated no significant effect on the mean scores. Tables 7 and 8 present detailed statistical analyses of ethnic sex scores. Only the difference in the mean scores of Floridian black boys (32.9) and Floridian black girls (40.8) indicates a noticeable difference within group. The girls scored noticeably higher than the boys in this dimension.

TABLE 7

Visual Literacy Variable 2 - Recognition of Action in Progress
Scores of Ethnic Groups

Statistics	White Floridian Boys and Girls	Black Floridian Boys and Girls	Western Nigerian Boys and Girls
Mean	46.0	36.9	29.5
Variance	168.7	238.2	162.4
Range	66.2	72.5	50.0
Std. Error	2.4	2.8	2.3
Kurtosis	1.9	1.9	0.1
Minimum	21.3	13.8	10.0
Std. Dev.	12.9	15.4	12.7
Skewness	0.9	1.2	0.5
Maximum	87.5	86.3	60.0

TABLE 8

Visual Literacy Variable 2 - Recognition of Action in Progress.
Scores of Ethnic/Sex Groups

Statistics	White Floridian Boys	White Floridian Girls	Black Floridian Boys	Black Floridian Boys	Black Floridian Boys	Western Nigerian Boys	Western Nigerian Girls
Mean	47.2	44.9	32.9	40.9	40.9	28.2	30.7
Variance	250.5	95.9	161.6	298.3	298.3	179.5	153.4
Range	66.2	37.5	40.0	68.8	68.8	50.0	46.3
Std. Error	4.1	2.5	3.3	4.5	4.5	3.5	3.2
Kurtosis	1.3	-0.68	-0.9	1.6	1.6	0.6	-0.4
Minimum	21.3	28.8	13.8	17.5	17.5	10.0	10.0
Std. Dev.	15.8	9.8	12.7	17.3	17.3	13.4	12.4
Skewness	0.9	0.5	0.3	1.4	1.4	0.9	0.2
Maximum	87.5	66.3	53.8	86.3	86.3	60.0	56.3

Linguistic Competence Variable 1 - Number of T-Units

The hypotheses tested under this dimension were

- Ho 4. There will be no significant difference between the mean score of boys and the mean score of girls on the linguistic competence variable, number of T-units made, in the story they told to the wordless picture story book.
- Ho 5. There will be no significant differences among the mean scores of Western Nigerian, black North Floridian and white North Floridian 7-year-olds on the linguistic competence variable, number of T-units made, in the story they told to the wordless picture story book.
- Ho 6. Sex and ethnicity, interacting, will have no significant effect on the mean scores on the number of T-units made in the story they told to the wordless picture story book.

The differences in the structure of the three ethnic languages involved prevented the use of mean length of T-units as a measure of linguistic competence. Therefore, the total number of T-units each child was able to make in response to the picture story was used as a measure of comparison among the ethnic groups. Every other dimension of linguistic competence was based on a ratio of that dimension to the total number of T-units made. To find out any significant difference among the ethnic groups' mean scores under this dimension, a 2x3 analysis of variance was run for sex and ethnic main effects. Table 9 shows that Ho 4 is supported. There is no significant sex difference in scores under this dimension. Ho 5 is not supported. The variable, ethnicity, has a significant effect on the mean score of the groups. Ho 6 is supported. Sex and ethnicity, interacting, have no significant effects on the

TABLE 9

Linguistic Competence Variable 1 - Number of T-Units.
 Analysis of Variance on Scores of the Three Ethnic
 Groups

Source	SS	df	MS	F ^a	Sig. of F
Main Effects:					
Sex	562.500	1	562.500	1.287	0.259
Ethnicity	26059	2	13029.730	28.811*	0.001
2-Way Interactions:					
Sex-Ethnicity	1927.467	2	963.733	2.205	0.114
Residual	36714.500	84	437.077		
Total	65263.949	89	733.303		

^aF - ratio required at .05 for main
 effect, Sex (df:1, 84): 3.92

F - ratio required at .05 for main
 effect, Ethnicity (df:2, 84): 3.02

F - ratio required at .05 for 2-way
 interactions
 Sex-Ethnicity (df:2, 84): 3.02

* Significant at or beyond .05 level

mean scores under this variable.

To determine where the ethnic significant difference lies, a post hoc test using Tukey's HSD was administered to the ethnic mean scores: Table 10 shows that the white Floridian and black Floridian subjects together constitute a subset under this dimension, particularly when each group is using his first language in an atmosphere of freedom and excitement of telling a story to a wordless picture book. This supports the view of Labov (1970, p. 163) of the alleged verbally-deprived black ghetto child whom he sees as "bathed in verbal stimulation from morning to night." Labov's attack on the misinterpretation and lack of understanding of black English, such as Bereiter's reference to the "ungrammatical" sentences as "a series of badly connected words" is here justified by the results.

The Western Nigerian subjects constitute a separate subset. They tell longer stories than either the white Floridian or the black Floridian subjects. This is understandable inasmuch as the Western Nigerian child is culturally a story-teller. This is discussed in greater detail below. Table 11 shows the Western Nigerian subjects' mean scores in this dimension as practically double that of either of their American counterpart groups (76.3 as against 43.2 or 37.8). Table 12 reveals the superiority of Nigerian girls over Nigerian boys in this dimension. This difference in their mean scores (85.3 as against 67.3) is worth noticing; whereas the sex difference in the other two ethnic groups is negligible.

TABLE 10

Linguistic Competence Variable 1 - Number of T-Units.
Post Hoc Comparison of Ethnic Mean Scores

Tukey's Honestly Significant Difference Procedure (HSD)

(1) Analysis of Variance

Source	df	SS	MS	F Ratio ^a	F Prob.
Between Groups	2	26059.4375	13029.7187	28.914*	0.000
Within Groups	87	39204.7500	450.6292		
Total	89	65264.1875			

^aF - ratio required at .05 (df:2, 87): 2.80

*Significant at or beyond .05 level

(2) Homogeneous Subsets^b

Subset 1	Group	Group 2	Group 1
	Mean	37.83	43.17
Subset 2	Group	Group 3	
	Mean	76.30	

^bSubsets of groups, no pair of which have means that differ by more than the shortest significant range for a subset of that size.

(3) Tukey's HSD

		Western Nigerian	White American	Black American
		76.5	43.2	37.8
Nigerian	76.3		33.1*	38.5*
White	43.2			5.4
Black	37.8			
Ranges for the .05 level: 3.37 3.37				
SEX = 3.87				
HSD = 13.06				

*Significant at or beyond .05 level

TABLE 11

Linguistic Competence Variable 1 - Number of T-Units.
Scores of Ethnic Groups

Statistics	White Floridian Boys and Girls	Black Floridian Boys and Girls	Western Nigerian Boys and Girls
Mean	43.2	37.8	76.3
Variance	179.0	210.2	962.7
Range	63.0	57.0	127.0
Std. Error	2.4	2.6	5.7
Kurtosis	2.5	-0.2	-0.3
Minimum	25.0	15.0	23.0
Std. Dev.	13.4	14.5	31.0
Skewness	1.3	0.6	0.2
Maximum	88.0	72.0	150.0

TABLE 12

Linguistic Competence Variable 1 - Number of T-Units.
Score of Ethnic/Sex Groups

Statistics	White Floridian Boys	White Floridian Girls	Black Floridian Boys	Black Floridian Girls	Western Nigerian Boys	Western Nigerian Girls
Mean	43.6	42.7	38.9	36.7	67.3	85.3
Variance	246.5	123.8	240.4	192.5	1115.5	203.8
Ranges	62.0	38.0	48.0	55.0	127.0	89.0
Std. Error	4.1	2.9	4.0	3.6	8.6	6.9
Kurtosis	2.7	-0.7	-0.9	1.2	0.8	-0.6
Minimum	26.0	25.0	15.0	17.0	23.0	31.0
Std. Dev.	15.7	11.1	15.5	13.9	33.4	26.5
Skewness	1.6	0.2	0.3	1.1	0.9	-0.2
Maximum	88.0	63.0	63.0	72.0	150.0	120.0

Linguistic Competence Variable 2 - The Use of
Subordinate Clauses

The hypotheses tested under this dimension were

- Ho 4. There will be no significant difference between the mean score of boys and the mean score of girls in their use of subordinate clauses in the stories they told to the wordless picture story book.
- Ho 5. There will be no significant differences among the mean scores of Western Nigerian, black North Floridian and white North Floridian 7-year-olds in their use of subordinate clauses in the stories they told to the wordless picture story book.
- Ho 6. Sex and ethnicity, interacting, will have no significant effect on the mean scores in their use of subordinate clauses.

Bear (1939), Heider and Heider (1940), and LaBrant (1933) designated the use of subordination in language as an indicator of a more mature and difficult form of language expression than simple parallel statements merely connected by "and," or "but." Hunt (1965) also discovered that "maturing children use more clauses per T-unit." Likewise, O'Donnell (1967) found that the number of clauses per T-unit increases with age.

Table 13, which shows a 2x3 analysis of variance in the ethnic use of subordinate clauses, indicates that sex has no significant effect on the subjects' use of subordinate clauses, but difference in ethnicity has a significant effect on group mean scores under this dimension.

To determine the area of ethnic difference, Tukey's HSD post hoc test was run on the ethnic mean scores. Table 14 shows two homogeneous subsets. The Western Nigerian subjects and the black Floridian subjects constitute one subset. There

TABLE 13

Linguistic Competence Variable 2 - Use of Subordinate
Clauses. Analysis of Variance in Scores of the Three
Ethnic Groups

Source	SS	df	MS	F ^a	Sig. of F
Main Effects:					
Sex	0.045	1	0.045	0.002	0.999
Ethnicity	230.733	2	111.366	4.172*	0.018
2-Way Interactions					
Sex-Ethnicity	33.955	2	16.977	0.614	0.999
Residual	2322.790	84	27.652		
Total	2587.522	89	29.073		

- ^aF - ratio required at .05 for Main
Effect, Sex (df:1, 84): 3.92
F - ratio required at .05 for Main
Effect, Ethnicity (df:2, 84): 3.02
F - ratio required at .05 for 2-way
interactions
Sex-Ethnicity (df:2, 84): 3.02

* Significant at or beyond .05 level

TABLE 14

Linguistic Competence Variable 2 - Use of Subordinate
Clauses. Post Hoc Comparison of Ethnic Mean Scores

Tukey's Honestly Significant Difference Procedures (HSD)

(1) Analysis of Variance

Source	df	SS	MS	F Ratio ^a	F Prob.
Between Groups	2	230.753	115.377	4.259*	0.017
Within Groups	87	2356.784	27.089		
Total	89	2587.537			

^aRatio required at .05 (df:2, 87): 2.80

*Significant at .05 level

(2) Homogeneous Subsets^b

Subset 1	Group	Group 3	Group 2
	Mean	3.88	5.33
Subset 2	Group	Group 2	Group 1
	Mean	5.33	7.76

^bSubsets of group: no pair of which have means that differ more than the shortest significant range for a subset of that size.

(3) Tukey's HSD

		White American	Black American	Western Nigerian
		7.76	5.33	3.88
White	7.76		2.44	3.88*
Black	5.33			1.44
Nigerian	3.88			
Ranges for the .05 level: 3.37 3.37				
SEX = .96				
HSD = 3.23				

*Significant at or beyond .05 level

is no significant difference in their capacity to use subordinate clauses. The white Floridians and the black Floridians constitute another subset. There is no significant difference in their ability to use subordinate clauses when each group is using his own first language. However, there is a significant difference in their ability to use subordinate clauses when each group is using his own first language. However, there is a significant difference between the white Floridians and Western Nigerians in their use of subordination. Table 16 shows that the white Floridian girls use more mature language than the white Floridian boys (mean scores being 8.6 for girls and 6.9 for boys). Table 15 shows mean scores of ethnic groups.

These results show that Ho 4 and Ho 6 are not rejected. Sex and interaction of sex and ethnicity have no significant effect on the mean scores under this dimension. Ho 5, however, is not supported. Ethnic differences have a significant effect on the mean scores.

Linguistic Competence Variable 3 - The Use of Colorful Verbs

The hypotheses tested under this dimension were

- Ho 4. There will be no significant difference between the mean scores of boys and the mean scores of girls in their use of colorful verbs in the stories they told to the wordless picture story book.
- Ho 5. There will be no significant differences among the mean scores of Western Nigerian, black North Floridian and white North Floridian 7-year-olds in their use of colorful verbs in the stories they told to the wordless picture story book.

TABLE 15

Linguistic Competence Variable 2 - Use of Subordinate
Clauses. Scores of Ethnic Groups

Statistics	White Floridian Boys and Girls	Black Floridian Boys and Girls	Western Nigerian Boys and Girls
Mean	7.8	5.3	3.9
Variance	27.3	34.7	19.3
Range	19.4	21.4	12.2
Std. Error	0.9	1.1	0.8
Kurtosis	0.1	0.8	0.9
Minimum	0.0	0.0	0.0
Std. Dev.	5.2	5.9	4.4
Skewness	0.7	1.2	0.9
Maximum	19.4	21.4	12.2

TABLE 16

Linguistic Competence Variable 2 - Use of Subordinate Clauses
Scores of Ethnic/Sex Groups

Statistics	White Floridian Boys	White Floridian Girls	Black Floridian Boys	Black Floridian Girls	Western Nigerian Boys	Western Nigerian Girls
Mean	6.9	8.6	5.8	4.8	4.2	3.6
Variance	21.1	33.8	54.2	17.0	23.6	16.2
Range	17.4	19.4	21.4	12.1	12.2	11.6
Std. Error	1.2	1.5	1.9	1.1	1.3	1.0
Kurtosis	0.5	-0.3	-0.1	-0.0	-1.2	-0.3
Minimum	0.0	0.0	0.0	0.0	0.0	0.0
Std. Dev.	4.6	5.8	7.4	4.1	4.9	4.0
Skewness	0.6	0.7	1.1	0.3	0.7	1.0
Maximum	17.4	19.4	21.4	12.1	12.2	11.6

- Ho 6. Sex and ethnicity, interacting, will have no significant effect on the mean scores in their use of colorful verbs.

The use of colorful verbs is a pointer to the child's power of imagination and his ability to verbalize his imagination in a picturesque manner. An attempt was made to see how the ethnic groups would perform in demonstrating this skill. To find out whether there were any significant differences between sex and ethnicity group scores, a 2x3 ANOVA was run. Table 17 presents evidence that there is no significant difference between the scores of the sexes, but ethnic differences have effects on the mean scores. To ascertain where the ethnic differences lie, a post hoc test (Tukey's HSD) was administered to the ethnic mean scores. Table 18 shows results of this procedure. One homogeneous subset, Western Nigerian and black Floridian subjects, did not present significant differences between the two ethnic groups in use of colorful verbs. The white Floridian subjects, who constitute another subset, performed significantly better than either the Western Nigerian or the black Floridian subjects in the use of colorful verbs. Although there are no significant sex differences, data of Table 20 demonstrate that white girls performed better in this dimension than white boys, and American black boys, and Western Nigerian boys performed better than their female counterparts. The lack of significance of sex on performance could be explained by Carroll's (1960) hypothesis that child-rearing practices may have changed during the past 30 years, leading to fewer sex differences in the development

TABLE 17

Linguistic Competence Variable 3 - Use of
Colorful Verbs. Analysis of Variance
on Scores of the Ethnic Groups

Sources	SS	df	MS	F ^a	Sig. of F
Main Effects:					
Sex	8.160	1	8.160	1.316	0.253
Ethnicity	250.701	2	125.350	20.211*	0.001*
2-Way Interactions					
Sex-Ethnicity	22.040	2	11.020	1.777	0.173
Residual	520.968	84	6.202		
Total	801.868	89			

^aF - ratio required at .05 for Main
Effect, Sex (df:1, 84): 3.92

F - ratio required at .05 for Main
Effect, Ethnicity (df:2, 84): 3.02

F - ratio required at .05 for 2-way
interactions
Sex-Ethnicity (df:2, 84): 3.02

* Significant at or beyond .05 level

TABLE 18

Linguistic Competence Variable 3 - Use of Colorful Verbs.
Post Hoc Comparison of Ethnic Mean Scores

Tukey's Honestly Significant Difference Procedure (HSD)

(1) Analysis of Variance

Source	df	SS	MS	F ^a	F Prob.
Between Groups	2	250.70	125.35	19.79*	0.0
Within Groups	87	551.18	6.34		
Total	89	801.88			

^aRatio required at .05 (df:2, 87): 2.80

*Significant at or beyond .05 level

(2) Homogeneous Subsets^b

Subset 1	Group	Group 3	Group 2
	Mean	1.14	1.60
Subset 2	Group	Group 1	
	Mean	4.89	

^bSubsets of groups, no pair of which has means that differ by more than the shortest significant range of a subset of that size.

(3) Tukey's HSD

	White American	Black American	Western Nigerian
	4.89	1.59	1.14
White	4.8867	3.29*	3.49*
Black	1.5967		.20
Nigerian	1.1400		

Ranges for the .05 level: 3.37 3.37
SEX = .45
HSD = 1.55

*Significant at or beyond .05 level

TABLE 19

Linguistic Competence Variable 3 - Use of Colorful Verbs
Scores of Ethnic Groups

Statistics	White Floridian Boys and Girls	Black Floridian Boys and Girls	Western Nigerian Boys and Girls
Mean	4.9	1.6	1.1
Variance	13.0	3.2	2.8
Range	14.3	5.3	6.3
Std. Error	0.7	0.3	0.3
Kurtosis	0.4	-0.2	1.9
Minimum	0.0	0.0	0.0
Std. Dev.	3.6	1.8	1.7
Skewness	0.9	0.5	1.6
Maximum	14.3	5.3	6.3

TABLE 20
Linguistic Competence Variable 3 - Use of Colorful Verbs
Scores of Ethnic/Sex Groups

Statistics	White Floridian Boys	White Floridian Girls	Black Floridian Boys	Black Floridian Girls	Western Nigerian Boys	Western Nigerian Girls
Mean	3.9	5.9	1.6	1.6	1.2	1.1
Variance	9.6	15.3	3.9	2.7	3.0	2.6
Range	10.6	14.3	5.3	4.0	6.3	4.4
Std. Error	0.8	1.0	0.5	0.4	0.5	0.4
Kurtosis	0.0	0.1	-0.9	-1.6	3.3	0.1
Minimum	0.0	0.0	0.0	0.0	0.0	0.0
Std. Dev.	3.1	3.9	1.9	1.6	1.7	1.6
Skewness	0.7	0.9	0.7	0.2	1.9	1.3
Maximum	10.6	14.3	5.3	4.0	6.3	4.4

language. The results of the analysis of variance under this dimension reveals that Ho 4 is supported. There is no significant difference between sexes in their use of colorful verbs. Ho 6 is also supported. Sex and ethnicity, interacting, indicated no significant difference in the mean scores. Ho 5 is rejected. Ethnic differences indicates a significant difference in the mean scores.

Linguistic Competence Variable 4 - The Use of Prepositional Phrases

The hypotheses tested under this dimension were

- Ho 4. There will be no significant difference between the mean scores of boys and the mean scores of girls on their use of prepositional phrases in the stories they told to the wordless picture story book.
- Ho 5. There will be no significant differences among the mean scores of Western Nigerian, black North Floridian and white North Floridian 7-year-olds on their use of prepositional phrases in the story they told to the wordless picture story book.
- Ho 6. Sex and ethnicity interacting together will have no significant effect on the mean scores in their use of prepositional phrases.

The subjects' stories were analyzed for evidence on ability to use prepositional phrases. The child's ability to use phrases such as "over the bar," "in the water," "into the box," and "with my father," is a major indication of fluency of speech. He is able to identify positions and relationships of objects or people to other objects or people. Table 21 shows an analysis of variance of this element in the stories of the three ethnic groups. For the main effect, sex and ethnicity,

TABLE 21

Linguistic Competence Variable 4 - Use of Prepositional
Phrases. Analysis of Variance on Scores of the
Three Ethnic Groups

Source	SS	df	MS	F ^a	Sig. of F
Main Effects:					
Sex	112.004	1	112.004	1.266	0.263
Ethnicity	97.213	2	48.607	0.549	0.999
2-Way Interaction					
Sex-Ethnicity	534.075	2	267.037	3.018	0.053
Residual	7432.766	84	88.485		
Total	8176.059	89	91.866		

- ^aF - ratio required at .05 for Main
Effect, Sex (df:1, 84): 3.92
F - ratio required at .05 for Main
Effect, Ethnicity (df:2, 84): 3.02
F - ratio required at .05 for 2-way
interactions
Sex-Ethnicity (df:2, 84): 3.02

there was no significant difference. Table 22, however, shows very slight differences in mean scores of the ethnic groups. The white Floridian subjects led with 30.9, followed by the Western Nigerians with 29.8 and then by the black Floridians with 28.4. A noteworthy difference between sexes in a specific ethnic group was that of the Western Nigerians (Table 23). Western Nigerian girls performed noticeably better than their male counterparts. Their mean score was 33.9, as against 25.6 for the boys.

The analysis of variance of the data on subjects' ability to use prepositional phrases shows that the three hypotheses, Ho 4, Ho 5, and Ho 6, are supported.

Linguistic Competence Variable 5 - The
Use of Adverbs

The hypotheses tested under this dimension were

- Ho 4. There will be no significant difference between the mean scores of boys and the mean scores of girls on their use of adverbs in the stories they tell to the wordless picture story book.
- Ho 5. There will be no significant difference among the mean scores of Western Nigerian, black North Floridian and white North Floridian 7-year-olds on their use of adverbs in the stories they tell to the wordless picture story book.
- Ho 6. Sex and ethnicity interacting together will have no significant effect on the mean scores on their use of adverbs.

The child's ability to use adverbs is another indicator of fluency in speech. He is able to identify and verbalize time or manner in which actions are performed, or places where

TABLE 22

Linguistic Competence Variable 4 - Use of
Prepositional Phrases. Scores of Ethnic Groups

Statistics	White Floridian Boys and Girls	Black Floridian Boys and Girls	Western Nigerian Boys and Girls
Mean	30.9	28.4	29.8
Variance	89.8	101.9	86.9
Range	41.3	44.3	42.6
Std. Error	1.7	1.8	1.7
Kurtosis	0.3	0.9	0.5
Minimum	9.7	13.8	6.7
Std. Dev.	9.5	10.1	9.3
Skewness	0.0	1.0	1.2
Maximum	51.0	58.1	49.3

TABLE 23

Linguistic Competence Variable 4 - Use of Prepositional Phrases.
Scores of Ethnic/Sex Groups

Statistics	White Floridian Boys	White Floridian Girls	Black Floridian Boys	Black Floridian Girls	Western Nigerian Boys	Western Nigerian Girls
Mean	32.8	29.1	27.3	29.5	25.6	33.9
Variance	83.2	95.4	119.4	89.2	59.5	84.3
Range	31.0	53.3	40.9	32.7	36.2	33.4
Std. Error	2.4	2.5	2.8	2.4	1.9	2.4
Kurtosis	-0.0	-0.1	2.5	-0.7	2.2	-0.2
Minimum	20.0	9.7	17.2	18.8	6.7	15.9
Std. Dev.	9.1	9.8	10.9	9.4	7.7	9.2
Skewness	0.8	0.5	1.7	0.3	-0.2	0.1
Maximum	51.0	45.0	58.1	46.5	42.9	49.3

actions take place. Table 24 presents the results of a 2x3 analysis of variance in the ethnic group and sex scores. There is no significant difference in the sex main effect. There is, however, a significant difference in ethnic main effect. The two-way interactions of sex and ethnicity also indicate significant difference. Thus, Ho 4 is supported, but Ho 5 and Ho 6 are not supported.

To determine the area of significance in ethnicity and interaction of ethnicity and sex, a post hoc test (Tukey's HSD) was used. Table 25 presents results of the Tukey procedure applied to scores of male subjects. Homogeneous subsets show that each ethnic group constitutes a separate subset in ability to use adverbs. The white males performed significantly better than either the black Floridians or the Western Nigerian males. There is also a significant difference between the scores of male black Floridians and male Western Nigerians. The black Floridian males performed significantly better than the Western Nigerian males.

Table 26 presents application of Tukey's HSD to the scores of the female subjects. The homogeneous subsets indicate that there is no significant difference between the white female Floridians and the black female Floridians in their ability to use adverbs. There is, however, a significant difference between the scores of American groups and the Western Nigerian subjects in their use of adverbs. The American groups performed significantly better. Tables 27 and 28 present details of statistical analysis of the ethnic

TABLE 24

Linguistic Competence Variable 5 - Use of Adverbs.
Analysis of Variance on Scores of the Three Ethnic Groups

Source	SS	df	MS	F ^a	Sig. of F
Main Effect:					
Sex	116.513	1	116.513	0.723	0.999
Ethnicity	17587.387	2	8793.691	55.273*	0.001
2-Way Interactions					
Sex-Ethnicity	1045.824	2	522.913	3.287*	0.041
Residual	13364.047	84	159.096		
Total	32113.773	89	360.829		

^aF - ratio required at .05 for Main
Effect, Sex (df:1, 84): 3.92

F - ratio required at .05 for Main
Effect, Ethnicity (df:2, 84): 3.02

F - ratio required at .05 for 2-way
interactions
Sex-Ethnicity (df:2, 84): 3.02

*Significant at or beyond .05 level

TABLE 25

Linguistic Competence Variable 5 - Use of Adverbs.
 Post Hoc Comparison of Male Use of Adverbs
 Interaction of Sex and Ethnicity

Tukey's Honestly Significant Difference Procedure HSD

(1) Male Groups - Analysis of Variance

Source	df	SS	MS	F Ratio ^a	F Prob.
Between Groups	2	11792.9102	5896.4531	36.279*	.000
Within Groups	42	6826.2539	162.5298		
Total	44	18619.1641			

^aRatio required at .05 (df:2, 42: 2.76

*Significant at .05 level

(2) Homogeneous Subsets²

Subset 1	Group	Group 3
	Mean	12.50
Subset 2	Group	Group 2
	Mean	32.26
Subset 3	Group	Group 1
	Mean	52.15

^bSubsets of groups, no pair of which have means that differ by more than the shortest significant range for a subset of that size.

(3) Tukey's HSD

	White American	White American	Western Nigerian
	52.15	32.26	12.50
White	52.15	19.89*	39.65*
Black	32.26		19.76*
Nigerian	12.50		

Ranges for the .05 level: 3.43 3.43

SEX = 3.29

HSD = 8.39

*Significant at or beyond .05 level

TABLE 26

Linguistic Competence Variable 5 - Use of Adverbs.
Post Hoc Comparison of Female Use of Adverbs
Interaction of Sex and Ethnicity

Tukey's Honestly Significant Difference (HSD)

(1) Female Groups -- Analysis of Variance

Source	df	SS	MS	F Ratio ^a	F Prob.
Between Groups	2	6840.4102	3420.2051	21.971*	0000
Within Groups	42	6538.0703	155.5583		
Total	44	13378.4805			

^aF - ratio required at .05 level (df:2, 42): 2.76

*Significant at or beyond .05 level

(2) Homogeneous Subsets^b

Subset 1	Group Mean	Group 3 17.28
Subset 2	Group Mean	Group 2 41.35
		Group 1 45.11

^bSubsets of groups, no pair of which have means that differ by more than the shortest significant range for a subset of that size.

(3) Tukey's HSD

	White American 45.11	Black American 41.35	Western Nigerian 17.28
White	45.11	3.77	27.83*
Black	41.35		13.51*
Nigerian	17.28		

Range for the .05 level: 3.43 3.43

SEX = 3.29

HSD = 8.39

*Significant at or beyond .05 level

TABLE 27

Linguistic Competence Variable 5 - Use of Adverbs.
Scores of Ethnic Groups

Statistics	White Floridian Boys and Girls	Black Floridian Boys and Girls	Western Nigerian Boys and Girls
Mean	48.6	36.8	14.9
Variance	242.3	168.3	90.3
Range	63.4	60.5	35.3
Std. Error	2.8	2.4	1.7
Kurtosis	0.4	0.6	-9.4
Minimum	22.6	12.1	0.0
Std. Dev.	15.6	12.9	9.5
Skewness	0.5	0.5	0.5
Maximum	86.0	72.0	35.3

TABLE 28

Linguistic Competence Variable 5 - Use of Adverbs.
Scores of Ethnic/Sex Groups

Statistics	White Floridian Boys	White Floridian Girls	Black Floridian Boys	Black Floridian Girls	Western Nigerian Boys	Western Nigerian Girls
Mean	52.2	45.1	32.3	41.3	12.3	17.3
Variance	287.7	187.8	101.4	203.0	98.5	76.2
Range	63.4	51.9	36.0	51.6	33.3	34.5
Std. Error	4.4	3.5	2.6	3.7	2.6	2.3
Kurtosis	0.4	0.3	0.3	0.0	0.4	-0.0
Minimum	22.6	23.1	12.1	21.0	0.0	0.8
Std. Dev.	16.9	13.7	10.1	14.2	9.9	8.7
Skewness	0.4	0.4	0.3	0.5	1.0	0.1
Maximum	86.0	75.0	48.1	72.6	33.3	35.2

and the sex groups.

Tables 24, 25 and 26 indicate that Ho 4 is rejected; Ho 5 and Ho 6 are rejected.

Linguistic Competence Variable 6 - The Use of Adjectives

The hypotheses tested under this dimension were

- Ho 4. There will be no significant difference between the mean scores of boys and the mean scores of girls on their use of adjectives in the stories they tell to the wordless picture story book.
- Ho 5. There will be no significant difference among the mean scores of Western Nigerian, black North Floridian and white North Floridian 7-year-olds on their use of adjectives in the stories they tell to the wordless picture story book.
- Ho 6. Sex and ethnicity, interacting, will have no significant effect on the mean scores on their use of adjectives.

Children at the age under examination should be able to describe shapes, colors, and sizes to compare things by degrees. The subjects' stories were analyzed for evidence of their ability to use adjectival words to describe things, people or places. Table 29 presents the results of an analysis of variance in the scores of the ethnic and sex groups. The table indicates that Ho 4 is supported. There is no significant difference between sex groups in their ability to use adjectives. Ho 6 is also supported. The 2-way interaction between sex and ethnicity has no significant effect on the mean scores. Ho 5 is rejected. Ethnic differences have a significant effect on the group scores. To determine where the significant difference lies, a post

TABLE 29

Linguistic Competence Variable 6 - Use of Adjectives.
 Analysis of Variance on Scores of the Three
 Ethnic Groups

Source	SS	df	MS	F ^a	Sig. of F
Main Effects:					
Sex	2.705	1	2.705	0.047	0.999
Ethnicity	5524.980	2	2762.490	48.515*	0.001
2-Way Interactions:					
Sex-Ethnicity	119.379	2	59.689	1.048	0.356
Residual	4783.070	84	56.941		
Total	10430.137	89	117.193		

^aF - ratio required at .05 for Main
 Effect, Sex (df:1, 84): 3.92

F - ratio required at .05 for Main
 Effect, Ethnicity (df:2, 84): 3.02

F - ratio required at .04 for 2-way
 interactions
 Sex-Ethnicity (df:2, 84): 3.02

*Significant at or beyond .05 level

hoc test (Tukey's HSD) was administered to the ethnic scores. This shows (Table 30) that each ethnic group constitutes a separate subset in the use of adjectives. There is a significant difference among the mean scores of the white subjects, the black American subjects and the Western Nigerian subjects. The white subjects performed significantly better than the other two ethnic groups. The black American subjects used more adjectives than the Western Nigerian subjects. Table 31 presents detailed statistical analysis of the ethnic groups under this dimension, and Table 32 presents ethnic/sex means under this dimension.

The mean scores of the ethnic groups show that the white American subjects led with a mean score of 25.6. They are followed by the black American subjects with a mean score of 19.8. The Western Nigerian subjects did not use adjectives as much as the other two groups. Their mean score is 6.8.

Linguistic Competence Variable 7 - The Use of Feeling Words

The hypotheses tested under this dimension were

- Ho 4. There will be no significant difference between the mean scores of boys and the mean scores of girls in their use of feeling words in the stories they told to the wordless picture story book.
- Ho 5. There will be no significant difference among the mean scores of Western Nigerian, black North Floridian and white North Floridian 7-year-olds in their use of feeling words in the stories they told to the wordless picture story book.

TABLE 30

Linguistic Competence Variable 6 - Use of Adjectives.
Post Hoc Comparison of Ethnic Mean Scores

Tukey's Honestly Significant Difference Procedure (HSD)

(1) Analysis of Variance

Source	df	SS	MS	F Ratio ²	F Prob.
Between Groups	2	5525.0742	2762.5371	48.996	0.400
Within Groups	87	4905.3086	56.3828		
Total	89	10430.3829			

²F - ratio required at .05 (df: 2, 87): 2.76

(2) Homogeneous Subsets^b

Subset 1	Group Mean	Group 3 6.84
Subset 2	Group Mean	Group 2 19.80
Subset 3	Group Mean	Group 1 25.58

^bSubsets of groups, no pair of which have means that differ by more than the shortest significant range for a subset of that size.

(3) Tukey's HSD

	White American 25.58	Black American 19.80	Western Nigerian 6.84
White 25.58		5.78*	18.74*
Black 19.80			12.96*
Nigerian 6.84			

Ranges for the .05 level: 3.37 3.37

SEX = 1.37

HSD = 4.62

*Significant at or beyond .05 level

TABLE 31

Linguistic Competence Variable 6 - Use of Adjectives
Scores of Ethnic Groups

Statistics	White Floridian Boys and Girls	Black Floridian Boys and Girls	Western Nigerian Boys and Girls
Mean	25.6	19.8	6.8
Variance	120.1	32.5	16.5
Range	46.8	26.4	20.9
Std. Error	2.0	1.0	0.7
Kurtosis	2.2	0.2	5.9
Minimum	11.4	6.9	1.7
Std. Dev.	10.9	5.7	4.6
Skewness	1.6	0.1	2.1
Maximum	58.2	33.3	22.6

TABLE 32

Linguistic Competence Variable 6 - Use of Adjectives
Scores of Ethnic/Sex Groups

Statistics	White Floridian Boys	White Floridian Girls	Black Floridian Boys	Black Floridian Girls	Western Nigerian Boys	Western Nigerian Girls
Mean	27.0	24.1	18.7	20.9	5.9	7.7
Variance	184.9	59.4	40.2	24.6	8.9	23.8
Range	46.8	27.3	26.4	17.1	11.9	20.9
Std. Error	3.5	1.9	1.6	1.3	0.8	1.3
Kurtosis	0.9	1.5	0.7	-0.7	1.8	4.5
Minimum	11.4	16.7	6.9	13.2	2.1	1.7
Std. Dev.	13.6	7.7	6.3	4.9	2.9	4.9
Skewness	1.3	1.5	0.4	0.0	1.3	1.9
Maximum	58.2	44.0	33.3	30.3	14.0	22.6

- Ho 6. Sex and ethnicity, interacting, will have no significant effect on the mean scores for use of feeling words.

Feeling words are adjectives, but they are adjectives with a difference. They indicate the child's ability to identify the emotional state of characters in the story. It was interesting to see how subjects were able to use positive and negative feeling words and show cause and effect: "The turtle took his book, and the dog was mad." "They are all happy." "The dog was angry." Table 33 presents an analysis of variance in ethnic and sex group scores. The sex main effect indicated no significant difference, but ethnicity main effect indicated a significant difference. The two-way interaction of sex and ethnicity presents no significant difference in mean scores. Table 34 presents results of HSD administered post hoc to determine where significance of ethnic difference lies. The homogeneous subsets show that the two American ethnic groups together constitute a subset, and the Nigerian ethnic group constitutes another. The mean score of the Western Nigerian subjects under this dimension (0.1) indicates that they don't use feeling words. The white American subjects' mean score is significantly higher than that of either the black Floridians or the Western Nigerians. The black Floridians' mean score under this dimension is also significantly higher than that of their Western Nigerian counterparts. Table 35 presents detailed statistical analysis of the ethnic groups and Table 36 presents detailed statistical analysis of the ethnic/sex groups.

TABLE 33

Linguistic Competence Variable 7 - Use of Feeling Words. Analysis of Variance on Scores of the Three Ethnic Groups

Source	SS	df	MS	F ^a	Sig. of F
Main Effects:					
Sex	0.187	1	0.187	0.021	0.999
Ethnicity	185.947	2	92.974	10.383*	0.001
2-Way Interactions:					
Sex-Ethnicity	5.462	2	2.731	0.305	0.999
Residual	752.185	84	8.955		
Total	943.781	89	10.604		

^aF - ratio required at .05 for Main Effect, Sex (df:1, 84): 3.92

F - ratio required at .05 for Main Effect, Ethnicity (df:2, 84): 3.02

F - ratio required at .05 for 2-way interactions Sex-Ethnicity (df:2, 84): 3.02

*Significant at or beyond .05 level

TABLE 34

Linguistic Competence Variable 7 - Use of Feeling Words.
Post Hoc Comparison of Ethnic Mean Scores

Tukey's Honestly Significant Difference Procedure (HSD)

(1) Analysis of Variance

Source	df	SS	MS	F Ratio ^a	F Prob.
Between Groups	2	185.9473	92.9736	10.673*	0.000
Within Groups	87	757.8433	8.7108		
Total	89	943.7905			

^aRatio required at .05 level (df:2,87): 2.80

*Significant at .05 level

(2) Homogeneous Subsets^b

Subset 1	Group Mean	Group 3 0.13
Subset 2	Group Mean	Group 2 2.35
		Group 1 3.60

^bSubsets of groups, no pair of which have means that differ by more than the shortest significant range for a subset of that size.

(3) Tukey's HSD

	White American 3.60	Black American 2.35	Western Nigerian .13
White 3.60		1.26*	3.48*
Black 2.35			2.22*
Nigerian .13			

Ranges for the .05 level: 3.37 3.37

SE_X = 2.9

HSD = .97

*Significant at or beyond .05 level

TABLE 35

Linguistic Competence Variable 7 - Use of Feeling
Words. Scores of Ethnic Groups

Statistics	White Floridian Boys and Girls	Black Floridian Boys and Girls	Western Nigerian Boys and Girls
Mean	3.6	2.3	0.1
Variance	11.6	14.2	0.3
Range	13.6	16.3	2.5
Std. Error	0.6	0.7	0.1
Kurtosis	1.2	6.1	15.8
Minimum	0.0	0.0	0.0
Std. Dev.	3.4	3.8	0.5
Skewness	1.3	2.5	4.2
Maximum	13.6	16.3	2.5

TABLE 36

Linguistic Competence Variable 7 - Use of Feeling Words.
Scores of Ethnic/Sex Groups

Statistics	White Floridian Boys	White Floridian Girls	Black Floridian Boys	Black Floridian Girls	Western Nigerian Boys	Western Nigerian Girls
Mean	3.3	3.9	2.6	2.1	0.1	0.2
Variance	12.3	11.6	18.5	10.9	0.1	0.4
Range	13.6	11.3	16.3	12.5	1.3	2.5
Std. Error	0.9	0.9	1.1	0.9	0.1	0.2
Kurtosis	3.5	-0.4	5.7	5.3	11.0	11.0
Minimum	0.0	0.0	0.0	0.0	0.0	0.0
Std. Dev.	3.5	3.4	4.3	3.3	0.3	0.6
Skewness	1.9	0.8	2.6	2.4	3.7	3.7
Maximum	13.6	11.3	16.3	12.5	1.3	2.5

The analysis of variance and the post hoc tests show that Ho 4 and Ho 6 are supported, but Ho 5 is rejected. Sex and interaction of sex and ethnicity have no significant effect on the mean scores, but ethnicity has a significant effect on the mean scores.

Mean Length of T-Units

The concept of T-units was introduced as a measure of language by Hunt (1965). He called it Minimal Terminal Unit or "T-Unit." Loban earlier had called it Communication Unit. Hunt (1965) and O'Donnell (1967) both agreed that the length of T-units is a major indicator of syntactic maturity and that the length increases with children's age.

Although the statistical details on ethnic group scores on Mean Length of T-Units (Tables 37, 38 and 39) have been derived from the same statistical analysis of variance, ethnic group reports have been prepared separately. This is because it is the researcher's belief that, since the three ethnic languages have different structures and are not similar in complexity, an ethnic comparison under this dimension will not be a valid one. For instance, a T-unit in Yoruba, which carries the same meaning in English, may be much longer than one in English which may be just a word or visa-versa (e.g., Nigbati o wa ya for "then," or "later on" and "O joko l'eti 'do" for "He sat at the bank of the river").

TABLE 37

Mean Length of T-Units on Stories Told to
A Wordless Picture Story Book by
30 Western Nigerian Seven-Year-Olds

Statistics	Boys and Girls Together	Boys	Girls
Mean	5.5	5.8	5.3
Variance	0.9	1.1	0.5
Range	3.6	3.0	2.6
Std. Error	0.2	0.3	0.2
Kurtosis	-0.5	-0.3	-0.4
Minimum	3.8	3.9	3.8
Std. Dev.	0.9	1.0	0.7
Skewness	-0.1	-0.5	-0.2
Maximum	7.4	7.4	6.4

TABLE 38

Mean Length of T-Units on Stories Told to
A Wordless Picture Story Book by
30 Black North Floridian American Seven-Year-Olds

Statistics	Boys and Girls Together	Boys	Girls
Mean	5.9	5.7	6.1
Variance	0.6	0.9	0.2
Ranges	3.7	3.7	1.7
Std. Error	0.1	0.3	0.1
Kurtosis	0.4	0.2	-0.6
Minimum	4.1	4.1	5.2
Std. Dev.	0.8	0.9	0.5
Skewness	0.1	0.6	0.2
Maximum	7.8	7.8	6.9

TABLE 39

Mean Length of T-Units on Stories Told to
A Wordless Picture Story Book by
30 White North Floridian American Seven-Year-Olds

Statistics	Boys and Girls Together	Boys	Girls
Mean	6.1	6.2	5.9
Variance	0.4	0.6	0.2
Range	3.2	3.1	1.9
Std. Error	0.1	0.2	0.1
Kurtosis	2.9	1.7	0.9
Minimum	5.0	5.1	5.0
Std. Dev.	0.6	0.7	0.4
Skewness	1.1	0.9	0.2
Maximum	8.2	8.2	6.9

It is interesting, however, to see from Tables 37, 38 and 39 that white boys and Western Nigerian boys score slightly higher than their female counterparts in this dimension, whereas the female black Americans score slightly higher than their male counterparts in this dimension.

CHAPTER 5

DISCUSSION AND CONCLUSIONS

This study was designed to investigate the differences that might characterize the responses of North Floridian and Western Nigerian 7-year-olds to wordless picture story books. It was assumed that sex differences, ethnic differences and interaction of sex and ethnicity would not have any significant effect on their responses to these books. Two major dependent variables were studied: (1) Visual Literacy, which examined the ability of the ethnic groups to see details in the number of things contained in the picture and their ability to interpret actions that are supposed to be in progress in the sequentially arranged pictures that form a unified story; and (2) Linguistic Competence, which examined seven different dimensions, namely (a) total number of T-units, (b) use of subordinate clauses, (c) use of colorful verbs, (d) use of describing words - adjectives, (e) use of adverbs, (f) use of prepositional phrases, and (g) use of feeling words. The latter six dimensions were reported as ratios of the number of T-units made so as not to penalize the child who told a shorter story.

Discussion of Findings

Chapter Four presents tables of the analysis of the data under each dependent variable. The sex main effect on the mean scores was consistently not significant. This is consistent with a number of pieces of research which have compared boys and girls. MacCoby (1967) noted that there are no sex differences in special tasks before age 7, and Broverman et al. (1972) cited evidence to show the sex differences noticeable after the age of eight are "due to increased testosterone output in males from that age, reaching a peak at puberty." Carroll (1960) had earlier hypothesized that child-rearing practices may have changed during the past thirty years leading to fewer sex differences in the development of language. Menyuk (1963), reporting on the oral language of nursery and first grade children, found very few significant differences between sexes on language measures taken. In the present study, although in both visual literacy and linguistic competency measures there are no significant differences between the sexes, yet the mean scores in most of the dimensions of linguistic competence show that girls in the three ethnic groups performed slightly better than boys. This is in conformity with the report of McCarthy (1930) that girls developed various skills at a slightly faster rate than did boys.

The results also showed that ethnic main effect has been consistently responsible for the differences in mean

scores. Generally, there is not much of a difference between the performance of the black Floridian subjects and that of their Western Nigerian counterparts. The white Floridian subjects performed significantly better, particularly in syntactic maturity, than each of the other two ethnic groups. This is culturally significant. The white child has been taught to speak out, whereas the cultures of Western Nigerian Yorubas forbid a child to be outspoken, particularly where adults are present. Interviews with black American friends revealed a carry-over of this to the American black culture -- "A child should be seen and not beheard." The white American child, therefore, has greater opportunity to practice mature language, to interact with adults linguistically and to freely express his feelings.

The lack of significant difference in one visual literacy variable (seeing details) is consistent with Furby's (1971) contention that the "Developmental trends in American children parallel those of the city school children in Africa, since their experiences with perceptual analysis are almost identical" (p. 249). The bi-lingual tendencies of the Western Nigerian child served as an added advantage for him in identifying and naming objects in the story. Where he/she could not identify an object in his mother tongue, he reverted to the English name or the already incorporated English name in his language. Therefore, he/she identified "boketi" for "bucket," "sobiri" for "shovel," "peli" for "pail," "fulawa" for "flower," "pants" for "underwear," "seti" for "shirt," etc.

In the dimension of action in progress, which is a strong measure of visual literacy, the white American subjects demonstrated better performance than the other two ethnic groups. There was no significant difference between the performance of the American black subjects and the Western Nigerian children. Apparently the Western Nigerian children are not used to telling stories from pictures or books, even though their culture provides for the heritage of oral storytelling. The Yoruba parents or older brothers or sisters often gather younger children in the family, particularly when the moon is full, and Yoruba folk tales are told to them for their enjoyment. The advent of amenities of western civilization (e.g., electricity) and the accompanying socio-economic stratification within the society is causing this tradition to die out. The American children enjoy the tradition of bedtime stories read to them even in infancy. They enjoy greater facilities for watching cartoons on T.V., in and out of school. The home background is generally book-oriented and, therefore, they performed significantly better than their Western Nigerian counterparts, who have little or no exposure to most of these cultural influences. Although the parental socio-economic background was controlled in the present study, no control could be imposed for the more advanced state of American society, compared with that of Western Nigeria.

One other factor to consider in interpreting performance of Western Nigerian subjects under this dimension is that the

Nigerian child uses picture books generally to learn his all-important second language -- English, and the concept of a wordless story book is essentially new to him. Tapes reveal their tendencies to use the picture books as they use pictures to learn a new language, e.g., to learn English names of objects or a new sentence pattern. (I can see a _____. The dog is on the hill). Therefore, although they voiced twice the number of T-units as their American counterparts, their stories are not as coherent as those of American subjects.

In some cases, Nigerian subjects missed significant points in action in progress in the story, one especially being that the boy in the story went fishing. Some of them (particularly girls) saw the boy merely "putting a stick in the water." Although Labov (1970) has stated that "Different subcultural groups are predisposed to interpret the experimental stimuli (situation) differently," there seems to be no justification for this lack of fishing experience, since one of the biggest rivers in Yoruba land passes through the town where the research was conducted and fishing should therefore not be a totally strange idea to a 7-year-old, if local resources had been put into maximum use in teaching. The American subjects have the advantage of seeing a lot of fishing going on on T.V. programs, so all of them recognized the point. Maybe Miller's (1938) finding needs to be kept in mind in conducting a research like this. Miller found that it was necessary for the teacher to direct the children "to important items in the picture, if pictures were to be of value." The lack of evidence

of creativity among those who missed the point of fishing in the story goes to confirm Swick and Blackwell's findings (1972) that the less familiar the picture, the less often the children responded. Children are more creative and more verbose when dealing with pictures which represent their own culture and life styles.

The three ethnic groups' performance in this dimension confirms Sawyer's (1949) assertion that the art of story-telling lies within the story-teller, and is compounded by certain variables such as experience, creative imagination and gift for selection which comes partly out of experiences. She concluded that under all good story telling "lies the common denominator of racial inheritance" (p. 36). The sample stories in Appendix E are consistent with the belief of Charles Morgan that "Children are the freest, the most universal creators. Left unhampered, they begin very young to put into every day life, a series of masterpieces of creative thinking and doing" (Sawyer, 1949, p. 115).

Results presented under the linguistic variables (Tables 9 to 36) revealed that when each child is using his first language, differences in performance are both individualistic and ethnic. Greenberg (1963) asserted that languages do not differ in their degree of development and Chomsky (1966) later said that "One cannot attribute to a people a cognitive capacity that is less than is required to produce the complex rule-governed activity called language."

Cole & Bruner (1971) contended that "The different groups (defined in terms of cultural, linguistic, and ethnic criteria) do not differ intellectually from each other in any important way." However, significant differences found in syntactic maturity dimensions in this study contradict their assertion that "A deficit does not exist in minority group children," and their doubt as to whether "any non-superficial differences exist among cultural groups." The permissive culture of the white American, as against the controlled culture of both the black American and the Western Nigerian, gives the white child a better chance of interacting with adults for better and faster development of language. A number of social forces cannot be dismissed as non-influential in the acquisition of experience and outspokenness within the varied cultural groups. The "deficit hypothesis" cannot be totally dismissed.

One area of language difference that deserves mention is the use of feeling words. The Western Nigerian subjects, Table 35 reveals, did not use feeling words in their stories. Could this be explained by the cultural tendency of the Yorubas to act out rather than to voice their feelings? Their tendency is to keep emotions within the individual, unexpressed verbally for some social reasons. Anger, love, happiness, fear, etc. are generally expressed by action, rather than by words. Two of their traditional sayings support this contention: "Fi eje sinu; tu'to funfun jade," and "Bi isu eni ba ta, nse ni a nfowo bo o."

The American elementary schools have counselors who care about the feelings of the child and encourage him to verbalize his feelings. A common question at all educational levels is, "How do you feel about this issue?" Thus teachers know where children are emotionally and help them to move towards a specific goal, cognitively or affectively. This getting in touch with the child's feelings is a developmental counseling approach which is not yet a part of the Nigerian elementary school curriculum. Right from the early years of elementary school the child learns fear -- fear of making mistakes, fear of failing an examination, fear of teachers' or parents' disapproval and probable chastisement. Although the respect for authority and age which characterizes the Yoruba's child's culture should be encouraged, there should be room for greater freedom of speech and more emphasis on the affective side of education in the curriculum.

Within the Yoruba culture, children who speak intelligently in proverbs and colorful words are generally those who live their early years with their grandparents (Omo odo agba) where they are less controlled, more loved, better attended to and freer to express themselves using adult language. There is need for research to substantiate this theory empirically.

The emphasis in this discussion on development of mature language through interaction with adults (the behaviorist theory) is not to disregard other language development theories, such as the natavistic theory and cognitive theory as discussed by

Wanat (1974). The behaviorist theory stresses acquisition of mature language through the language of the adults around the child and by reinforcement of his attempts. The natavistic theories claim that language development is influenced by the development of the human brain, and there is an innate capacity for learning language. Each of these theories definitely accounts for some language behavior in school-age children, and language learning approaches could be based on them. The emphasis in this discussion is on the experience approach to the development and acquisition of language. This approach embraces all three theories. The environmental opportunities could be used to the fullest. No matter what culture, the experience approach involves interaction with adults and enough spontaneous activities are available for interaction with peers, teacher and material.

Concerning the nativistic theory, which claims that language development is influenced by the development of the human brain and is limited by innate capacity for learning language, even Jensen, despite his jensenism in other areas of his writing in favor of superiority of nature over nurture, admits (1969, p. 100) that significant differences in test performance can be caused by differential adaptation to the test situation. The point of emphasis here is that, although the cognitive theory is catered to by the experience approach, the child takes an active role in learning. His potentialities, his individual differences are all taken care of as he demonstrates his interest, aptitude, his creative ability and his

power of imagination (Allen, 1976; Allen & Allen, 1976).

It is the wish and hope of the present researcher that all three cultures involved in this study provide in their school curricula more opportunity for children in their early years to think visually and verbalize their thinking clearly in whatever language they speak. The use of picture stories, or what Hanna et al. (1971) described as pictographs and ideographs, can be a good approach. Children could tell stories about their own drawings. They can be led to record photographs of their activities in an experience of cooking, visits to places of interest (such as the zoo, the museum), puppet shows, language learning center activities (Allen & Allen, 1976) and other experience opportunities. Children could later talk about pictures they recorded. More opportunities should be given to children to get in touch with their feelings and verbalize them adequately. Opportunities could be found in classroom activities such as role playing, talking about pictures, the magic circles, etc. (Witmer & Myrick, 1974).

Summary of Findings

The analyses of stories told by subjects in this study were based on two independent variables, namely, sex and ethnicity. There were two dependent variables, each of which had a number of dimensions. The dependent variables are: visual literacy and linguistic competence. The dimensions of visual literacy were: ability to recognize things in the

picture story books (i.e. attending to details by naming objects) and the ability to interpret actions that are supposed to be in progress in the sequentially arranged pictures.

The second dependent variable, linguistic competence, had seven dimensions to it. These dimensions measured each subject's syntactic maturity. They were: the number of T-units made, the tendency to use subordinate clauses, colorful verbs, adjectives, adverbs, prepositional phrases and feeling words. Each of these dimensions was tested under the following hypotheses (results follow each hypothesis):

A. Visual literacy variables

- Ho 1. There will be no significant differences in the mean scores of boys and the mean scores of girls on each of the two visual literacy variables.

Result: In both dimensions of visual literacy, namely, recognition of things in details and recognition of actions in progress in the picture story, this hypothesis was supported. The sex main effect was not significant for the mean scores.

- Ho 2. There will be no significant difference among the mean scores of Western Nigerian, black North Floridian and white North Floridian American 7-year-olds on each of the visual literacy dimensions.

Result: This hypothesis was supported for the dimension of recognition of things, but was rejected for the dimension of recognition of action in progress.

- Ho 3. Sex and ethnicity, interacting, have no significant effect on the mean scores on each of the two visual literacy variables.

Result: This hypothesis was supported fully.

B. Linguistic competence variables

- Ho 4. There will be no significant difference between the mean score of boys and the mean score of girls on each of the seven linguistic competence dimensions.

Result: This hypothesis was supported for all seven linguistic competence dimensions. The sex main effect was not significant for the mean scores.

- Ho 5. There will be no significant differences among the mean scores of Western Nigerian, black North Floridian American and white North Floridian American 7-year-olds in each of the seven linguistic competence dimensions.

Result: This hypothesis was supported for the dimension of the use of prepositional phrases but was rejected for each of the other dimensions, namely, the number of T-units made, the use of colorful verbs, adjectives, adverbs and feeling words. Analysis of variance showed that ethnicity had a significant effect on the mean scores in those dimensions.

- Ho 6. Sex and ethnicity, interacting, will have no significant effect on the mean scores on each of the seven linguistic competence dimensions.

Result: This hypothesis was rejected for the dimension of the use of adverbs but was supported for the other six linguistic competence dimensions (See tables 40 and 41).

Other highlights of the results as statistical analysis of variance and post hoc comparisons demonstrate are as follows:

1. On the whole, the white American subjects scored significantly higher than both the Western Nigerian and the black American in most of the dimensions of linguistic competence. They scored significantly higher in recognition of actions in progress, the use of colorful verbs, adverbs, adjectives and feeling words. This is probably because their

TABLE 40

Mean Scores of Ethnic Groups Under Each of the Dimensions
of Visual Literacy and Linguistic Competence Variables

Variables	White Floridian	Black Floridian	Western Nigerian
Visual Literacy:			
Number of Things	27.9	25.5	24.4
Action in Progress Ratio	46.0	36.9	29.5
Linguistic Competence:			
Number of T-Units	43.2	37.8	76.3
Subordination Ratio	7.8	5.3	3.9
Colorful Verbs	4.9	1.6	1.1
Adverbial Ratio	48.6	36.8	14.9
Adjective Ratio	25.6	19.8	6.8
Prepositional Ratio	30.9	28.4	29.8
Feeling Words Ratio	3.6	2.3	0.1

TABLE 41

Significance of Main Effects Under Each of the Dimensions
of Visual Literacy and Linguistic Competence Variables

Variables	Sex	Ethnicity	Interaction
Visual Literacy:			
Number of Things	No	No	No
Action in Progress Ratio	No	Yes	No
Linguistic Competence:			
Number of T-Units	No	Yes	No
Subordination Ratio	No	Yes	No
Colorful Verb Ratio	No	Yes	No
Prepositional Phrase Ratio	No	No	No
Adverbial Ratio	No	Yes	Yes
Adjective Ratio	No	Yes	No
Feeling Words Ratio	No	Yes	No

culture seems to encourage greater opportunity for interactions with adults for freer practice in mature language than exists within the other two cultures.

2. The Western Nigerian subjects scored significantly higher than both the white American and the black American subjects in the number of T-units they made. The stories they told to the Wordless Picture Story Books were different from those told by North Floridian children. This is probably because they are used to a tradition of oral story telling, which apparently is not part of the North Floridian culture. In visual literacy they demonstrated an advantage of a second language. They were able to name things in two languages -- Yoruba and English or a corruption of English. The Western Nigerian subjects scored significantly lower than their North Floridian counterparts in the use of complex language, such as the use of subordinate clauses, adjectives and adverbs. This is either because the characteristics of the Yoruba language of children of that age level do not encourage complexity, or because they are not used to telling stories to pictures in a book as American children, or because their culture is less encouraging of children's interaction with adults. North Floridian subjects demonstrated an advantage of a book-oriented society and a more advanced society where the T.V. and other media directly or indirectly prepare

children for oral story-telling from printed matter (e.g., cartoon stories on T.V. and bedtime stories for children).

3. The three cultural groups told somewhat different stories. Although subjects of all groups have parents who have at least a high school education, no further attempt was made in this study to equalize their socio-economic levels. Most parents of white children in the Gainesville sample are professionals, whereas most black Floridian parents of the children of the same age level are not. Similarly, the socio-economic level of Floridian parents with high school education cannot be validly equated to that of Western Nigerian high school diploma bearers.
4. Apparently, prepositional phrases are the weakest indicator of syntactic maturity of the subjects used in this study. They did not identify any significant differences among the ethnic groups, whereas each of the other linguistic competence variables did.
5. It is also apparent from the results of this study that telling long stories to wordless picture books is not related to the quality or linguistic sophistication of stories told. This is particularly so when stories compared are those of children from different cultural and environmental backgrounds.
6. This study generalizes that sex differences and interaction of sex and ethnicity have no significant

effect on children's visual literacy and linguistic maturity, but ethnicity and environment have a significant effect on the level of syntactic maturity of young children.

Limitations of the Study

The generalizations drawn from this study have some limitations.

1. The small sample used from each ethnic group cannot be representative of the ethnic groups. For instance, the Yoruba children from other sections of Yoruba land of Western Nigeria who speak different dialects of the Yoruba language.
2. The basis of selection of subjects is not thorough enough. For instance, the socio-economic level of parents of subjects was equalized only roughly. Perhaps equalization of IQ of subjects would have been better, although it was difficult to find a test that was cross-culturally fair enough for the purpose of this study.
3. Schooling and process of acculturation within cultures may have had considerable effect on the cultural disposition of subjects, and thus the causes and effects presented here may have had their limitations.
4. Much as the help and contributions of research assistants in Nigeria are appreciated, the question of distance from a research center here in the U. S. may have constituted a limitation of this study.

Despite these presumed limitations, however, the results of the study are illuminating enough for purposes of further research and educational developments across cultures.

Educational Implications of the Study

For Teachers in the United States:

1. Wordless Picture Story Books might be used as a language generator in the classroom. Children who participated in this study unanimously manifested their enjoyment. They demonstrated variety in their stories, in their expressions, imagination and creative thinking.
2. Wordless Picture Story Books might enhance story-telling abilities of children who are not accustomed to such oral language activities. The books might help tremendously towards a revival of the tradition of oral story-telling.
3. Teachers can examine differences among the ways children react and tell stories to the wordless books, compare them with other language stimuli, and draw local conclusions for curriculum planning and innovations.
4. The use of Wordless Picture Story Books appears to be an especially good way of helping shy children speak spontaneously. They can be used to improve the self-concept of those with low self-concept and the language of those with weak language background. Older children, too, can practice the use of colorful action words, descriptive words and feeling words using Wordless Picture Story Books.
5. Wordless Picture Story Books seem to be a convenient introduction to visual literacy skills and higher level reading skills, such as sequence, recall, cause and

effect, etc.

For Teachers in Western Nigeria and Other Developing Countries

1. There is need to introduce children to books other than the class text books, especially in the area of children's literature. This could be done as early as their first year of schooling.
2. Wordless Picture Story Books could be used to encourage children to practice oral language, even in their first language. Picture books could be used for purposes other than the teaching of English as a second language.
3. The use of Wordless Picture Story Books might make a bridge between oral story telling and reading. It can help in pre-reading readiness activities, such as turning pages, recalling ideas from previous pages, etc.
4. The fact that tapes of children's stories revealed that children enjoyed the task and told a variety of stories indicated that Wordless Picture Story Books are high motivation factors and they could be used as stimuli to develop further reading skills and, of course, visual literacy skills.
5. There is need to encourage children to express their feelings verbally and recognize other people's feelings practically and verbally. This calls for the introduction of counseling with children in the classroom. Children could use Wordless Picture Story Books to recognize feelings of others and interpret cause and effect.

6. Wordless Picture Story Books are a good and cheap device to get worthwhile literature into the hands of children without having to translate languages.

For Publishers of Wordless Picture Story Books

1. It appears necessary that children be involved in research to field-test the educational values of Wordless Picture Story Books before publishing a large number of them.
2. There should be some consideration for cross-cultural utility of stories before publication for Wordless Picture Story Books can easily be used across cultures without translation of languages.
3. Educational consultants could be hired to advise teachers and parents on the educational values of previously published books. This could serve for purposes of advertisement and guidance for productive use of new Wordless Picture Story Books. For instance, the potentials for language stimulation values of Wordless Picture Story Books could be published along with such books to help teachers and parents make maximum use of them.

Suggestions for Further Research

1. A number of pieces of research reviewed in this study have indicated that ability to interpret pictures correctly increases with age, and acquisition of mature language also increases with age. It will be interesting to see what

the results of a study similar to this one would be with older children of various cultures who have spent a longer period of enculturation and acculturation through schooling and watching T.V. and a longer period of interacting with adults.

2. This study assumed that a fair balance in socio-economic background and educational level of the parents of subjects from the three cultures should give all subjects a fairly comparable background. It would be a worthwhile exercise to explore a way of validly measuring the IQ of subjects across cultures before conducting a research like this, thus permitting equalizing subjects according to IQ, rather than socio-economic backgrounds.
3. More research of this type might be conducted
 - (a) with different cultural groups,
 - (b) with larger samples of children,
 - (c) with stronger control of population,
 - (d) with varying analysis procedures,
 - (e) using different stimuli and comparing two Wordless Picture Story Books.
4. Intervention studies might use wordless picture books as a method of helping children "read" stories (visual literacy) and "tell" stories to see what effects those experiences have on learning to read and appreciation of literature.

5. Children's responses to literature of various types have been studied. These need be reviewed with the inclusion of responses to Wordless Picture Story Books to see if there are any generalizations which are applicable.
6. Longitudinal studies might be done to see
 - (a) when Nigerian children make the transition from oral story-telling to reading.
 - (b) how they improve in their responses to Wordless Picture Story Books.
 - (c) how they improve in their use of feeling words.
7. Oral studies of children from various cultures could be compared with their stories to a common stimulus, such as a Wordless Picture Story Book.
8. Further research could also be conducted to answer the following questions
 - (a) Can interest of children in reading Wordless Picture Story Books (as tapes reveal) be maintained and used to increase skills in visual literacy and language development?
 - (b) Can oral story-telling to Wordless Picture Story Books as a form of pre-reading activity help to improve reading and comprehension?
 - (c) Do different Wordless Picture Story Books elicit different language patterns, such as greater or less use of subordinate clauses, dialogue or feeling words? Do they encourage different levels of imagination,

- creative thinking and spontaneous verbalization?
- (d) Can Wordless Picture Story Books be used to teach poetry?
 - (e) To what extent can the Wordless Picture Story Book be depended upon in teaching a second language or teaching illiterate adults?
 - (f) What differences would the results have shown if what each cultural group talked about were recorded pictures of activities they took active part in? In other words, could stimuli for eliciting language which are personal and local produce different results?
 - (g) What other use for language development purposes can the Wordless Picture Story Books have, e.g. dramatization, art, vocabulary development?
 - (h) How else could Wordless Picture Story Books be used for both cognitive and affective development of young children?
 - (i) Will greater emphasis on the use of Wordless Picture Story Books lead to greater and more productive involvement of parents in the cognitive, language and affective development of their young children in developing countries?

Finally, two hypotheses from two important advocates of the promotion of the use of wordless picture books in the elementary school quoted here are pregnant with possibilities for research projects. Cianciolo (1973) has suggested that

Elementary school children can be taught to distinguish between good and inferior stories. However, in order to make these distinctions, they must have some understanding of the basic components of literature, namely, setting, theme, characterization, plot and style. One may make use of the wordless picture books to gain understandings of these component fictions.

The study by Simpson (1975) is a good start in this area of studies. But, can this apply cross-culturally?

Debes (1969) also claims that the following would be the desirable attributes and skills of a visually literate person:

- . To read visuals with skill
- . To write with visuals expressing oneself effectively
- . To know the grammar and syntax of visual language and be able to apply them
- . To be familiar with the tools of visual literacy and their use
- . To be able to translate from visual language to verbal language and vice versa. (page 27).

Can research studies be conducted to empirically test the validity of any of these assertions or hypotheses?

APPENDIX A
INTERVIEWER'S STANDARD DIRECTIONS

Establishing Rapport

Please, establish necessary rapport with the child first. It is important that I know the name and age of the child who is telling a story. You may, therefore, begin establishing rapport with a brief interview, such as: What's your name? How old are you? Please encourage the child to speak out. Unless the child is in a relaxed mood and atmosphere with sufficient freedom of movement, of interaction with you, you may not get the best out of him/her. As the child tells his/her story, please remember there should be no force of any kind, no intimidation whatsoever. What the child needs for our purpose are reinforcements, support, approval -- all of which help a great deal in drawing him/her out of his/her shell. This is the only way the child can exercise creative imagination and voluntarily verbalize his/her thinking.

Time Factor

It is advisable that the child tell his/her story when he/she is at his/her best, i.e., when she/he is not tired, sleepy or hungry. I therefore suggest the morning hours. Nine or ten o'clock in the morning may be a good time. It is also advisable that the time between his/her first story

telling and the second should not be longer than 24 hours. Therefore, if he told his first story at 9:00 or 10:00 A.M. on Monday, let him tell the second story at 9:00 or 10:00 A.M. on Tuesday.

Recording the Child's Story

Please, record the two stories of each child on the same tape. Please, don't capitalize too much on the recording on tape, so that the child will not take recording of his stories too seriously and thereby have a divided attention. If possible, please use a tape recorder which has a built-in microphone and encourage the child to speak aloud. If the child only murmurs his/her words, his/her stories may be difficult to transcribe for analysis. As the story goes on and at the end of each story, please show appreciation of the child's efforts with a big smile on your face, a pat on his/her back or a pat on his/her head.

Interviewer's Standard Directions (Root & Studier, 1975)

Please, follow these directions strictly, I would like for all the subjects to be given the same directions. This is very important for the purpose of this study.

Direction

This is a book that tells a story. But the story doesn't have any words. That is so you can tell the story just by looking at the pictures. The name of the book is _____.

Now, I want you to go through the book and look at the pictures first and just tell the story to yourself. Then when you finish, I want you to go back to the beginning and start again and tell me the story. O.K.?

All right, so you take the book and just look at it and tell the story to yourself. Remember, look at the pictures and see which story they tell. What do the pictures say?

Child reads book to self.

Finished? Good. Now, start back at the beginning and look at the pictures and tell the story to me. The name of the book is _____. Tell me what is going on in the pictures. What story do they tell?

If the child starts right on, let him/her go on with his/her story with little or no comment at all. If initially he/she hesitates, you may start him on by asking, "What is happening here? And then? Good! That's right, etc." Please don't influence the child's story in any way. Let him/her tell his/her story as he wants to. You may give encouragement, such as O.K., Good! Thank you, but please, don't suggest any idea to the child. Any such story where recording indicates an adult interfering with the child's thinking will not be useful for the purpose of this study.

This is an example of such an interview on a Wordless Picture Story Book, entitled Bobo's Dream for your observation.

Thank you very much for your interest and cooperation.

Yours in talking and chalking,

Sam Omotoso

APPENDIX B

THINGS IDENTIFIABLE IN THE WORDLESS
PICTURE STORY BOOK

A boy, a dog, a frog and a friend
by Mercer Mayer, Dial Press, 1974

trees	shorts	earth/dirt, sand
leaves	underwear	paw
butterfly	belt	boots
dog	fishing rod (pole)	grass
frog	string, line, rope	tree branches
boy	bait	dog's thigh
bank	river (water pond)	dog's head
shovel	cloud	frog's head
pail (bucket) handle	insect	woods
stone	lily pad	small hill
rocks	turtle	bush
shirt	hook	cork
feet	bubbles/splashes	cat tail
pants	flower	handle
shoes	hole	grave

APPENDIX C

POSSIBLE ACTIONS IN PROGRESS IN THE WORDLESS PICTURE STORY BOOK

A boy, a dog, a frog and a friend
by Mercer Mayer, Dial Press, 1974

A boy is fishing on the bank of a river.
A butterfly is flying in the air around him.
The boy is watching the cork in the water with interest.
His dog and frog are watching from the bank of the river.
His dog closes his eyes.
The frog is watching with interest.
Something is pulling on the line.
The boy is pulling the line with excitement.
The dog and the frog are curiously watching the boy.
The boy pulls hard, and his fishing pole is bent.
The butterfly is sitting on limb, watching.
The boy now has a strained look on his face.
He cannot pull out his catch.
He is pulled into the pond head first in a splash.
The frog and the dog jump into the water after him.
The boy is swimming to the shore.
He sees the turtle carrying away his hook in his mouth.
He is calling and shouting at the turtle.
The dog swims across.
The dog is barking at the turtle on the grass.
The frog is watching the angry dog fight.
The turtle is angry and fussing.
The turtle bites on the dog's paw.
The boy becomes angry with the turtle.
The dog is howling in pain.
The frog escapes in fear.
The boy pulls his dog from the turtle's grip.
The turtle does not let go his grip.
The boy carries his dog with the turtle still biting on his paw.
The dog closes his eyes still in pain.
The turtle loses his grip.
He fell into the water.
The dog is relieved, licking his paws.
The boy gets ready to go back home (packs his things).
The frog and the dog are sitting on the bank of the river.
The dog looks back in surprise.
Something is pulling on his tail in the water.

The frog looks scared.
It is the turtle again pulling the dog into the water.
The boy has a sad look on his face.
He is pulling his hair in anger.
The dog is drowning in bubbles.
Only one of his thighs shows up now.
The frog jumps into the water after the dog.
The boy himself gets ready to go into the water to get his dog.
He loosens his belt and takes off his pants.
He takes off his boots.
He is unbuttoning his shirt.
The dog and the frog swim back to shore.
The boy is no more going into the water.
He gets dressed.
The frog dips his head into the water to see the turtle.
The turtle is floating on his back.
He puts his hand on his mouth and mocks the turtle.
The frog is talking at the turtle.
The boy uses his fishing rod to haul the turtle to shore.
The frog sits on the lily pad.
He turns (both eyes closed) away from the sight.
The boy brings the "dead" turtle to shore.
The turtle is only playing dead.
The dog crouches behind the boy with his tail tucked in.
The turtle is still upside down playing dead on the sand.
The boy digs a hole near a tree with a shovel to bury the turtle in.
The dog and the frog watch him do it.
The boy brings more earth out of the hole and makes it wider.
He picks up a flower to put on the turtle's grave.
The turtle opens his eyes as the frog watches in surprise.
The turtle turns back up.
He walks towards the fishing pole, smiling.
He picks up the fishing pole in his mouth.
The boy turns around and is happily surprised.
The boy comes to the turtle laughing.
The frog, the dog and the boy are happy together.
the boy carries the turtle up in the air.
The turtle has the fishing rod in his mouth.
The dog and the frog hop for joy.
The boy packs his things -- bucket, shovel, and fishing pole.
He walks home through the woods with his dog, his frog and his new friend.
The frog sits on the turtle's back as they walk home.

APPENDIX D

A LIST OF FEELING WORDS

Compiled by Robert D. Myrick
Professor of Education
University of Florida, Gainesville, Florida

UNPLEASANT

Abandoned	Exasperated	Panicked
Agony	Exhausted	Persecuted
Ambivalent	Fatigued	Petrified
Angry	Fearful	Pressured
Annoyed	Flustered	Quarrelsome
Anxious	Foolish	Rejected
Betrayed	Frantic	Remorse
Bitter	Frustrated	Restless
Bored	Frightened	Sad
Burdened	Grief	Scared
Cheated	Guilty	Shocked
Cold	Intimidated	Skeptical
Condemned	Irritated	Sorrowful
Confused	Isolated	Startled
Crushed	Jealous	Strained
Defeated	Jumpy	Stupid
Despair	Left out	Stunned
Destructive	Lonely	Tenuous
Different	Longing	Tense
Diminished	Low	Threatened
Discontented	Mad	Tired
Distracted	Maudlin	Trapped
Distraught	Mean	Troubled
Disturbed	Melancholy	Uneasy
Dominated	Miserable	Unsettled
Divided	Nervous	Vulnerable
Dubious	Odd	Weak
Empty	Overwhelmed	Weepy
Envious	Pain	Worried

PLEASANT

Accomplished	Enchanted	Infatuated
Adequate	Enhanced	Inspired
Affectionate	Energetic	Joyful
Befriended	Enjoy	Kind
Bold	Excited	Loving (love)
Calm	Fascinated	Peaceful
Capable	Fearless	Pleasant
Caring	Free	Pleased
Challenged	Fulfilled	Proud
Charmed	Generous	Refreshed
Cheerful	Glad	Relaxed
Clever	Gratified	Relieved
Comforting	Groovy	Rewarded
Confident	Happy	Safe
Content	Helpful	Satisfied
Delighted	High	Secure
Determined	Honored	Settled
Eager	Important	Sure
Ecstatic	Impressed	Warm

APPENDIX E

SAMPLES OF STORIES TOLD AND THEIR ANALYSIS

The Story of a White North Floridian Subject

A boy and his frog and a dog went fishing one day, (and) the boy caught something. (And) While the dog stood looking (and umm), then it started. Whatever the boy caught started pulling him in the water. And (then the frog) then the dog kept on looking. And then it pulled him all the way in the water. And the frog and the dog jumped in with him. And finally they found that it was a turtle. And then the dog went over and barked at the turtle. And so finally, the little boy had to take the dog and the turtle home. And so they walked all the way home with the dog, and fishing pole. And, and, finally they got over to where they were fishing at. And he started laughing. And then the dog kept licking his paw. And they got ready to go home. And then the dog found out (that) someone was tugging on his tail. And the frog and the person looked. And the little boy looked. And then the boy started pulling his hair, because (the - um - dog) it was the turtle again. (And the dog) and the turtle was pulling in the dog into the water. And the frog jumped after the dog and the turtle. And the boy started unbuttoning his shirt. And then the little boy, the dog had got it. So the little boy started taking off his clothes to go swimming. And then finally the dog's head came out of the water too. And the little boy put his hand over his mouth. And the dog kept looking at the turtle. And the turtle was upside down - dead. (And then, the) so the frog started weeping. You know, crying sort of.

And then the little boy tried to fish the turtle out of the water. And then the little boy got mad at the turtle. And the frog did too for hurting the turtle. And then, so the frog and the dog went home pouting. And, (no, no, no, umm) (so the dog) so they went over to the little boy. And the little boy started digging something. (What! Yea!) Started digging something to bury the turtle in. So then he started taking out some more. Trying to hide something. And then, (right), when they put down the flowers, the dog looked up. And the turtle got up. And they all found out (that) the turtle was alive again! And so they all started playing with the turtle. (And then) and then they went on home with the turtle, with the frog on the turtle's back and the turtle carrying the fishing pole.

Analysis

1. Number of Things Recognized:

boy
dog
turtle
paw
clothes
frog
water
fishing pole
tail
flower
paw

2. Number of Actions in Progress Recognized:

41

3. Number of T-units Made:

45

4. Number of Subordinate Clauses Made:

while the dog stood looking
 whatever the boy caught
 that it was a turtle
 where they were fishing at
 that someone was tugging on his tail
 because it was the turtle again
 that the turtle was alive again
 when they put down the flowers

5. Number of Colorful Verbs Used:

unbuttoning
 was tugging
 fish (out)
 pouting

6. Number of Different Adjectives Used:

the
 his
 all
 little
 fishing (pole)
 upside-down
 dead
 alive
 mad

7. Number of Adverbs Used:

so, again	up, up	finally
sort of	out	while
so	then	at
home	out	ready
home	again	out
home	up	again
home	down	in
over, over	up	all
in	out	off
out	over	all
more	finally	finally
down	finally	up
off	finally	too

8. Number of Prepositional Phrases Used:

in the water	into the water	out of the water
in the water	on his tail	at the turtle
in with him	after the dog	to the little boy
at the turtle	of the water	with the turtle
all the way	of the water	with the turtle
with the dog	over his mouth	with the frog
	of the turtle	on the turtle's back

9. Number of Feeling Words Used:

(boy) got mad (frog) got mad

The Story of a Black North Floridian Subject

Once upon a time, there was a boy who always liked to go fishing. He always took his dog and his frog. The boy had caught a bite. He said (that) it was heavy. The fish pulled the dog, boy and frog into the water. They swam back on to land. But there wasn't a fish. And they was all soaking wet. But the turtle bit the dog's hand. So the dog jumped in the boy's hand - paw. They walked. And the boy walks into the water area. And the dog kept biting the dog's hand. As they walked, they looked. They finally got back on land. The frog came up. And then the dog had licked his hand. As soon as he got back on land, but his tail was in the water. The frog jumped. The boy took off his shirt. And then his shoes. The boy had, [had, um] swam back onto land. The boy [sigh] tired. And the turtle had swam. He turned his back. The frog took the turtle. The boy took his fishing pole in. And he stuck it into the frog's mouth. And he pulled him out. The frog sat down to the lily. The dog and the frog had came back on land. And looked at each other. And the boy hurried up to the turtle. It was on its back. The boy had picked up his shovel. And started digging. The, [the] turtle had turned back over again. And the frog watched. And the dog too. The boy had put a [inaudible] or something into the hole. The boy put, the boy had watched the turtle. When it walked over the fishing pole, he bit the fishing pole. And the boy turned around and laughed.

The dog and the frog too. The boy had picked up the fishing pole. And the turtle was still holding on. But the dog had stood up on his legs. And the dog kept [kept] jumping. Then they walked back home to home.

Analysis

1. Number of Things Recognized:

boy	paw
dog	hand
frog	shirt
water	shoes
land	fishing pole
turtle	lily
shovel	hole

2. Number of Actions in Progress Recognized:

47

3. Number of T-units Made:

53

4. Number of Subordinate Clauses Made:

who always liked to go fishing
 (that) it was heavy
 as they walked
 as soon as he got back on land
 when it walked over to the fishing pole

5. Number of Colorful Verbs Used:

hurried, was soaking

6. Number of Different Adjectives Used:

a	boy's
his	dog's
heavy	water
wet	its
tired	frog's
fishing	

7. Number of Adverbs Used:

once	back
there	back
always	as soon as
finally	back
all	off
there	back
up	in
then	out
back	down
there	back
there	up
again	soaky
back	home
back	over
back	too
finally	on
around	over
up	back
home	

8. Number of Prepositional Phrases Used:

upon a time
 into the water
 on to land
 on land
 in the water
 on to land
 into the frog's mouth
 to the lily
 on land
 at each other
 to the turtle
 on its back
 into the hole
 to the fishing hole
 on his legs
 to home
 in the boy's hand

9. Number of Feeling Words Used:

tired

The Story of a Western Nigerian Subject

Omodekunrin kan, aja, ati opolo, won gbe garawa ati sobiri ati kini ti nwon fi nmu eja, nwon ngbe lo. Omo yen joko si eti odo. O mu kini yen, o fi nmu eja. Bo se nmu eja, ni o mu eja. O fi ese bo inu omi. O [fa o] nfa soke. Aja ati opolo nwo o. O ja sinu omi. Aja ati opolo fo telee. Opolo ti de eti odo. Ijapa gbe kini ti won fi nmu eja ni owo. Aja fo soke. Opolo be (sinu) si ori okuta. Omo yen fa kini iwo. Omo yen -- o gbe aja yen. Ijapa ko gba. Ijapa ge omo yen je. O ge aja je. Ko ju'le. Omo yen gbe aja, o gbe lo. O gbe e de eti odo, On ati opolo. Aja ati opolo soro. Omo yen gbe koroba ati sobiri ati kini ti o fi nmu aja. Opolo nse ho. Aja, iru e ti bo sinu omi. [Omo], omokunrin na kawo lori. Aja ati opolo ti be sinu omi ati ijapa. Omo yen (se, omo yen) ntu botini aso, nitoripe aja ti sun sinu omi. Opolo na wa fe sun. Omo yen bo ewu e ati bata e. O ti bo o. O ti bo bata ati ati ewu e. O ku sokoto lasan, k'obo. Aja mbo ni eti odo. Aja we wa ba. Omo yen tun bere si ni wo sokoto e ati bata e. O se bayi. O se, [o se] femu. O se femu. Opolo duro si ori okuta, o nwo ijapa. Ijapa ti ku. Omo yen mu igi ti o fi mu eja, o mu. O ti, (oti) bo ijapa lorun. Aja yen wa gbe enu sile, on ati opolo. Omo yen gbe ijapa yen dani, ati kini ti o fi npeja. Omo yen gbe ijapa lo ati kini ti o fi npeja, ati koroba ati sobiri. Opolo ati aja ntelee. Omo yen de [eti -- o] de ilele. O ju kini yen'le. O ju ijapa le. Ijapa ti ku. Aja ati opolo, won sunmo. Omo yen bu yepe da silele. Ijapa ti ku. Opolo duro tii, ati aja. Omo yen, o ri fulawa. Aja joko ti kini ewe.

[Ewe] O ri ododo. [O ri ododo]. Ijapa ti ji. O ti nsa bo.
 Ijapa tun mu enu, o tun fi gbe igi kini ti won fi npeja. Omo
 yen gbe ijapa soke pelu kini yen. Opolo na fo soke. Aja fe
 ge ijapa je. Omo yen gbe sobiri ati koroba dani; o nlo.
 Opolo fo si ijapa lehin. Ijapa ngbe kini iwo bo, ati aja.

Analysis

1. Number of Things Recognized

Omodekunrin	aso	igi
aja	ewu	
opolo	bata	
garawa	sokoto	
sobiri	yepe	
odo	fulawa	
iwo	ewe	
etido	omi	
okuta	ijapa	

2. Number of Actions in Progress Recognized:

54

3. Number of T-units Made:

66

4. Number of Subordinate Clauses Made:

ti won fi nmu eja
 ti won fi nmu eja
 biose nmu eja
 to fi nmu eje
 nitoripe aja ti sun
 to fi nmu eja
 ti o fi npa eja
 to fi npa eja
 ti won fi npa eja

5. Number of Colorful Verbs Used:

0

6. Number of Different Adjectives Used:

kan	e
ji	aso
yen	
ku	

7. Number of Adverbs Used:

soke	ho
soke	femu
lo	bayi
tun	na
lasan	
(ju u) sile	
le	
tun	
bo	
soke	
soke	

8. Number of Prepositional Phrases Used:

ninu omi
 eti odo
 ni owo
 ori okuta
 eti odo
 sinu omi
 lori
 sinu omi
 sinu omi
 s'ori okuta
 lorun
 sile
 dani
 d'elele
 si'lele
 dani

9. Number of Feeling Words Used:

0

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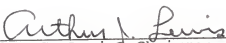
BIOGRAPHICAL SKETCH

The researcher was born on August 4, 1937 in Iree, Oyo State, Nigeria. His first language is Yoruba, the tribal language of the people of Western Nigeria. He holds several Nigerian teacher's certificates, including the higher levels, and has taught many years in Nigerian elementary schools and teacher training colleges. He received his Bachelor of Arts degree in History from the University of Ibadan, Nigeria in 1966 and his Master of Arts degree in Education, with an emphasis in Counseling, from Wake Forest University, North Carolina in 1974. In August, 1976, he will receive his Ph.D. degree in Education (Curriculum and Instruction), with an emphasis on Early Childhood Education, from the University of Florida.


He is the author of several articles in Nigerian educational and professional journals. He is also the author of two books: Practical teaching tests: Clue to success. Abeokuta: Baptist Press, 1969; and The exemplary pastor -- A biography of the Rev. E. O. Agboola, President, Nigerian Baptist Convention, Abeokuta: Baptist Press, 1971.

He is married and has four children. After receiving his Ph.D. degree from the University of Florida, he hopes to return to Nigeria to contribute his part in training teachers for the development of young Nigerians.

I certify that I have read this study and that in my opinion it conforms to acceptable standards of scholarly presentation and is fully adequate, in scope and quality, as a dissertation for the degree of Doctor of Philosophy.


Arthur J. Lewis, Chairman
Professor of Curriculum and
Instruction


I certify that I have read this study and that in my opinion it conforms to acceptable standards of scholarly presentation and is fully adequate, in scope and quality, as a dissertation for the degree of Doctor of Philosophy.


Linda L. Lamme, Co-Chairman
Assistant Professor of
Elementary Education

I certify that I have read this study and that in my opinion it conforms to acceptable standards of scholarly presentation and is fully adequate, in scope and quality, as a dissertation for the degree of Doctor of Philosophy.


Edna Ambrose
Associate Professor of Elementary Education

I certify that I have read this study and that in my opinion it conforms to acceptable standards of scholarly presentation and is fully adequate, in scope and quality, as a dissertation for the degree of Doctor of Philosophy.

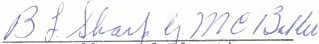

Evelyn H. Wenzel
Professor of Elementary
Education

I certify that I have read this study and that in my opinion it conforms to acceptable standards of scholarly presentation and is fully adequate, in scope and quality, as a dissertation for the degree of Doctor of Philosophy.


Robert D. Myrick
Professor of Counselor
Education

This dissertation was submitted to the Graduate Faculty of the College of Education and to the Graduate Council, and was accepted as partial fulfillment of the requirements for the degree of Doctor of Philosophy.

August, 1976


Dean, College of Education

Dean, Graduate School